IDG .net

Avon, EToys and other E-commerce sites offer last-minute holiday shopping ideas. Buyer's Guide, page 80

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DOJ wins Round 1

▸ *Judge bars Microsoft from bundling browser and OS; some users predict Windows 98 delay*

By Laura DiDio

USERS LAST WEEK MOSTLY shrugged off a federal injunction ordering Microsoft to stop requiring PC makers to bundle the Internet Explorer browser with any of its Windows operating systems.

It is unclear whether the government's initial win in its antitrust suit will further delay the release of Windows 98 and Windows NT 5.0.

But because the browser is even more tightly integrated into the base operating system kernel of those forthcoming products, some users expect a delay while Microsoft engineers work furiously to uncouple Internet Explorer from the operating system.

But Microsoft Corp. spokesman Adam Sohn denied that. "This ruling does not appear to affect our development plans or ship dates for Windows 98. We will ship Windows 98 on time as planned in the 1998 second quarter," he said. "Windows NT 5.0 is not part of the broader consent decree issue, so that's a bridge we haven't come to yet."

U.S. District Court Judge Thomas Penfield Jackson late last Thursday issued a preliminary ruling prohibiting Microsoft from engaging in "the practice of licensing the use of any

Justice, page 12

Browsing user reaction

"I think what Microsoft tried to do with Windows 95 was pretty crude and heavy-handed. [The ruling is] something of a plus."

– TOM JEFFREY, CIO, KAY BEE TOY STORES, PITTSFIELD, MASS.

"I don't like the idea that a judge can tell Microsoft or anybody what to do. If I were a manufacturer, I'd just put both browsers on computers and let the buyers decide."

– JOEL CONRAD, CIO, LIBERTY CORP., GREENVILLE, S.C.

"We have already standardized on Explorer because we think it is better."

– BERNIE CAMPBELL, CIO, SONOCO PRODUCTS CO., HARTSVILLE, S.C.

Info addicts wreak havoc on workplace

By Julia King

AT ONE COMPANY, a manager beeps himself every quarter of an hour to check the latest stock quotes. At another, a programmer spends a few hours a day cruising the Internet for everything from software upgrade news to deals on ski vacations.

They fritter away hours sending and receiving electronic mail, checking online news and downloading reams of data. They are information junkies, and right now, you are probably sitting next to one. If you aren't, you probably are one yourself.

That's because one out of two

Info addicts, page 106

IT EVANGELISTS

Techno-mavericks pose management challenges

Meet the high priests of geekery, the Johnny Appleseeds of corporate IT. Although their titles and styles vary, these evangelists seed business units with advanced technologies and nurture IT skunkworks. One evangelist is setting up a steerable laser beam for a building-to-building network. Another puts the latest gadgets in top executives' hands.

These mavericks often work closely with the IS department, senior editor Gary H. Anthes reports, but they can become loose cannons who end up as IS rivals and adversaries.

In Depth, page 83

Free ride on extranet express?

▸ *Firms wrestle with costs of opening databases*

By Craig Stedman

SHOULD CUSTOMERS pay to play, or are the queries on us?

That's the question facing companies that use the Internet to let outsiders access their data warehouses and decision-support databases. They have to decide whether the expense of hooking up external users can be recouped or will become a new cost of doing business.

So far, many companies are swallowing the costs as they go down the extranet-based warehousing path, which is emerging as a way to cement relationships with customers and potentially lock up their business (see chart, page 106).

But bucking the trend is

Extranet express, page 106

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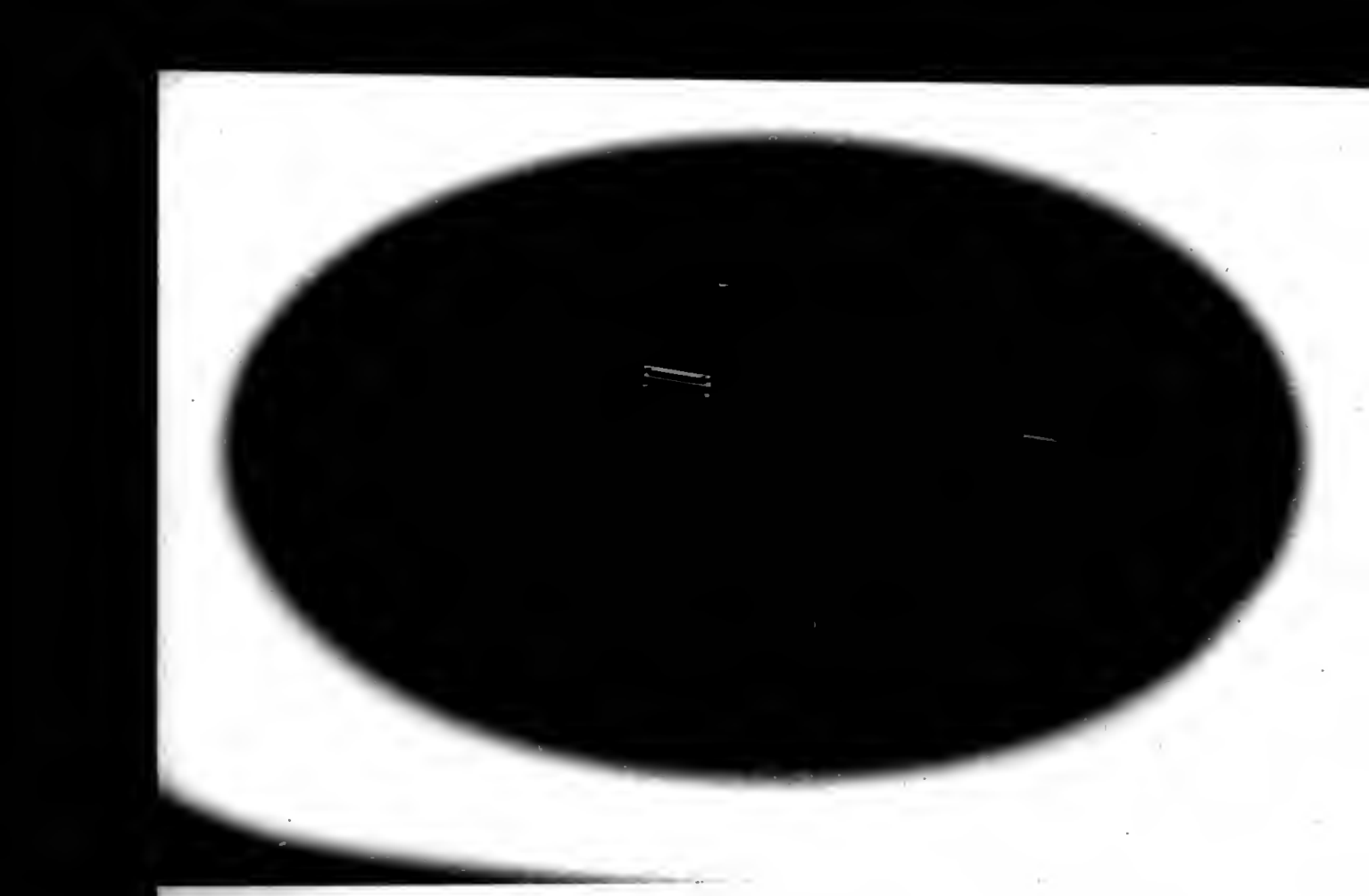

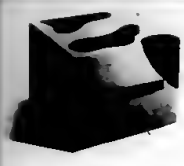

Funny how computers can make your life more difficult when their purpose is to make thin

easier. Well, the problem is you have all these different models and brands of portables that a

unable to share components. So you're stuck with the hassle and cost of maintaining a huge

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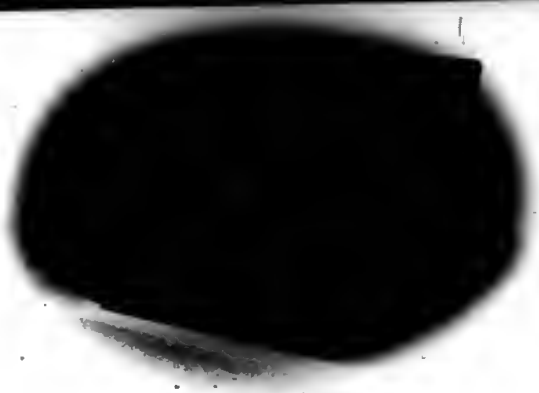

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ETC

[illegible]

Calif. bill would put cap on year 2000 damages

By Thomas Hoffman

A CALIFORNIA STATE legislator plans to introduce a bill next month that would restrict punitive damages awarded in year 2000-related lawsuits.

The legislation, to be filed by Brooks Firestone (R-Los Olivos), would limit damages in year 2000-related lawsuits to bodily injuries or costs to repair or replace hardware or software.

Experts say year 2000-related litigation could smash the $1 trillion mark. In July, legislators in Nevada passed a bill that would protect state agencies from year 2000-related lawsuits in the event of failures. Legal experts said they weren't aware of other state or federal legislation similar to that pending in California.

Under the Firestone proposal, if a bank licensed so-called year 2000-compliant accounting software from a California-based software vendor and the software failed in January 2000, the bank could sue for a sum equal to the cost of repairing the system or replacing the computer — but not for punitive damages or "pain and suffering," said Leon Page, Firestone's legislative director in Sacramento, Calif.

Firestone is pushing the legislation so that the state's high-tech industry "won't be devastated by lawsuits," Page said.

The legislation also means that a plaintiff could sue only for bodily injury if the injury was caused by a year 2000-related failure — such as being in an elevator with embedded hardware that fails, causing it to plummet 80 stories into a concrete foundation.

INDUSTRY PROTECTION

Critics of the measure argued that the legislation would protect the interests of Silicon Valley hardware and software vendors by limiting their exposure in year 2000-related lawsuits.

"If we're talking about a utility that was unable to provide power for half a day, I could understand putting limits on those kinds of damages," said Jim Jones, managing director of the Information Management Forum, an Atlanta-based user group for information systems executives from Fortune 100 companies.

But if a Silicon Valley database vendor didn't make a concerted effort to fix its date-sensitive software "then they should be liable for that," Jones said.

Vendors that don't conduct due diligence to repair their systems "should be sued," said Peter de Jager, a prominent year 2000 consultant in Brampton, Ontario.

If the California legislation passes — which industry observers said is unlikely — it "would give vendors carte blanche to do some sloppy year 2000 renovation work," said Nate Murphy, president of the Tri-State DB2 Technology Exchange, a New York-based IBM DB2 user group with 300 members.

"We're actively trying to protect the industry from attorneys."

— Leon Page, legislative aide

Dean Morehous, co-leader of the year 2090 legal team at Thelen, Marrin, Johnson & Bridges LLP in San Francisco, called the legislation a "half-baked" attempt at dealing with the more serious liability issues.

The "real reform," Morehous argued, should take place in Washington because high-tech firms facing "potentially ruinous lawsuits would be subject to a federal class-action suit" that supersedes state law.

Page said the legislation isn't an "immunity bill."

He did note, however, that the legislation is intended to draw high-tech companies from all over the world to set up shop in California.

"We're actively trying to protect the industry from attorneys," Page said.

Most vendors already have protection under most existing licensing agreements with disclaimers for consequential damages.

Such disclaimers should hold up in a court of law, said Mark Nebergall, vice president and counsel at the Software Publishers Association in Washington.

Separately, the Securities and Exchange Commission this week is expected to issue guidelines for publicly traded companies to deal with the year 2000 problem. □

UP FRONT

Next battle, please

A federal judge's ruling last week that Microsoft must stop forcing PC makers to bundle its Internet Explorer browser with Windows is good news for competition and for computer buyers. But this battle is far from over. I expect the competition will shift to new ground.

If the decision holds — and that's by no means certain — it will force Microsoft to effectively compete with Netscape on a level playing field. That means more creative features, distribution and licensing strategies by both companies. That's great news for users.

The decision also may force an end to the pointless quibbling about Sun's Java standard, which has preoccupied the industry for the past six months. If Microsoft truly had to compete head-to-head with Netscape, Microsoft would have little choice but to adopt the version of Java that is used by the rest of the industry.

The decision is good news for competition.

But I expect the main thrust of Microsoft's activities will be to come up with more creative ways to link Windows to the Internet.

There's no reason to believe a stand-alone browser will be the only way, or even the most common way, to access Web content.

Microsoft has already built a functional, if awkward, browser into Word. Active Desktop is a promising concept. Expect to see browsing, file transfer protocol and E-mail access built into every nook and cranny of Windows in the future.

The Department of Justice won the battle by choosing to attack Microsoft's weakest argument — that Internet Explorer is part of the operating system. But Microsoft can still win the war by blurring the lines between Windows and the Internet.

Now that it has to compete fairly with Netscape, Microsoft must render Netscape irrelevant. Don't underestimate its ability to do so.

Paul Gillin, *Editor*
Internet: *paul_gillin@cw.com*

THE FIFTH WAVE
BY RICH TENNANT

"From now on, let's confine our exploration of ancient Egypt to the computer program."

E-mail Rich Tennant at thewave@tiac.net

Java comes on strong

▸ *Internet World buzz indicates improvements are winning over developers*

By Sharon Gaudin
NEW YORK

THE CHORUS OF complaints about Java's speed, performance and platform independence seemed to be fading among the IS faithful gathered here last week at Internet World '97.

In interviews with a dozen corporate Java developers at the show, there were strong indications that the technical stumbling blocks are being cleared away.

The Java language of six months ago is a different creature from the tweaked product available today, developers said.

"We definitely skinned our knees with Java, but there have been no broken legs," said Mark Benerofe, vice president of platform development at Sony Online Ventures, Inc. in New York. "The cross-platform is working great for us, and we've saved months [of work] over developing with C++. So I can afford to lose a little skin."

Benerofe, who still is looking for better memory management and debugging, said the improvements in speed and cross-platform capabilities that have continued to arrive in Java Development Kit 1.1 (JDK) are helping to quickly mature a language that is only a years old.

TIMES HAVE CHANGED

Similar commentary from other corporate developers at the show also ran counter to the findings of some recent surveys, which have shown information systems managers and developers to be losing interest in Java development. Missing functions and problems with cross-platform capabilities were cited most often by the respondents as the roadblocks.

Users and analysts pointed out that some of those surveys are already dated. They were taken several months ago, before just-in-time compilers were souped up to boost speed, integral foundation classes were added and development tools and Java Virtual Machines finally caught up to support the latest JDK release.

"We definitely skinned our knees with Java, but there have been no broken legs."
– Mark Benerofe, Sony Online Ventures

Dan Woods, director of technology at Time, Inc. New Media in New York, said that in less than a year Java has gone from being useless for business applications to handling more than 18 million World Wide Web pages a week on his Java Web server.

HIGH MARKS

"We used JDK 1.0, and we couldn't deploy it because it wasn't nearly fast enough," said Woods, who now gives Java high ratings for reliability and ease of development. "When we stress-tested applications built with JDK 1.1, we were quite shocked. It was completely different."

But Woods said running Java applets or applications on different browsers still sometimes delivers different results. "You have a mishmash of support still in the browsers," he said, noting that Netscape Communications Corp.'s Navigator 3.0 doesn't support JDK 1.1.

David Spenhoff, director of product marketing at JavaSoft, Sun Microsystems, Inc.'s Java subsidiary, said those improvements all are planned for the next release of JDK. He also said the release, which hasn't been named yet, is expected in June, about half a year later than originally slated because JavaSoft wants third-party tool and browser developers to be in sync with that release.

"When we announced that JDK 1.1 was done, users were frustrated because browsers and tools lagged behind in supporting it, sometimes by months," Spenhoff said. "Licensees, like Symantec and Borland, are getting code drops now. We're learning that just throwing code over the wall doesn't help."

"We originally had issues with performance, about six months ago, but now it's good," said Teresa M. Light, a manager at Xerox Corp. in Webster, N.Y.□

BETTER LATE THAN NEVER

Sun has laid out a new timetable for several long-awaited products:

Hot Spot Java Virtual Machine	**Was due in mid-winter; now slated for 01 beta and June shipment**
JDK's next version	**Was slated for late this summer; now set for June shipment**

Correction

In "EMC takes first step to Fibre Channel" [CW, Dec. 1], EMC Corp.'s percentage of storage sales on Sun platforms was incorrectly cited as "a large portion of its open systems storage." According to Dataquest analyst Thomas Lahive, it makes up only 10% of EMC open systems storage sales.

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Management war escalates

▸ *HP takes on CA, Tivoli with upgrades to OpenView tool set*

By Patrick Dryden

IN THE BATTLE of enterprise-scale management suites, Hewlett-Packard Co. seems to be climbing out of its bunker.

HP fired several rounds at market leaders Computer Associates International, Inc. and Tivoli Systems, Inc. by announcing a series of enhancements to its OpenView tools last week at Internet World '97.

Each vendor is seeking a chunk of the management software market by integrating tools to control all aspects of client/server networks.

HP's efforts appear to be paying off. America Online, Inc., for example, announced that it adopted OpenView over CA's Unicenter TNG (The Next Generation) and Tivoli Management Environment (TME 10) in a deal worth $3.2 million.

OPENVIEW OVERVIEW

Hewlett-Packard announcements to address users' enterprise management needs:

- Launched Smart Plug-Ins, modules customized to manage applications from OpenView
- Integrated mainframe management through Sterling Software's Solve:Operations
- Expanded Internet management to integrate with Cisco's Resource Manager and to support additional firewalls
- Dedicated an OpenView sales force to compete with Computer Associates and Tivoli

"No single announcement stands out as a leap forward, but together they advance the whole package significantly," said Rich Ptak, director of system management research at D. H. Brown Associates, Inc. in Port Chester, N.Y. "With all the attention CA and Tivoli generate, HP can't afford to wait around to be revolutionary."

HP was slow to get beyond a "stovepipe view of networks and systems" by integrating management tasks horizontally, Ptak said. Now, he said, OpenView offers "a credible means to grow management" from desktops through networks to servers and mainframes and solve the same problems as Unicenter TNG and TME 10.

OpenView's expanding coverage should help operators manage more than interconnections, said user Trevor Paquette, a senior Unix network architect at Metronet Communications Corp. in Calgary, Alberta.

"We need a central OpenView console that can tell us not just whether the network is up, but how well the systems and databases are performing," Paquette said.

EXPANDED VIEW

An OpenView user at a Texas-based oil company said he welcomes the "total enterprise view" now possible through integration with Solve:Operations, mainframe management software from Sterling Software, Inc. in Dallas.

For example, operators can see how an error at the physical layer, say in a router, will affect SNA services running on top of the network, said the user, who asked to remain anonymous.

Outsourcer GE Capital Technology Management Services Canada welcomes the new tools to manage Internet devices and functions, servers, and applications, said Glenn Corcoran, national manager of enterprise management services.

Corcoran said he is glad HP has awakened to position OpenView as a viable enterprise management suite.

"HP's weakness has been its message to the marketplace, not its technology," Corcoran said. □

MEMO FROM THE TOP **Meet five top-level executives, four of whom sit on corporate boards. They hate expensive, runaway projects. They want to use IT to gain a competitive edge. And they're fed up with CEOs who pass off IT presentations to CIOs. Read what they had to say in a free-ranging interview with Computerworld's Allan E. Alter. Managing, page 74**

Sun Netra server helps reduce traffic, speed response times

▸ *Lets users cache frequently accessed Web sites and information off-line*

By Jaikumar Vijayan

CALL IT an attempt to "cache in" on a growing trend.

Sun Microsystems, Inc. last week announced its Netra Proxy Cache server, a hardware and software bundle that lets customers cache frequently accessed World Wide Web sites and information.

The idea is to give Internet service providers, companies with large intranets or electronic-commerce sites a way to reduce network traffic by taking information off-line to cache it on servers.

Web-caching servers typically sit between the client browser and an information source. Whenever a user asks for Web content, the request is first sent to the Netra Proxy server to see if the information already has been cached. If it has been, the information is sent directly to the user.

"It's all about performance and data throughput and the ability to deliver service quickly and cleanly."
– Greg Garry, Dataquest

Otherwise, the Netra Proxy server retrieves, sends and caches the information for future use.

That technique is increasingly being used as a way to reduce network traffic and improve Web response times.

"It's all about performance and data throughput and the ability to deliver service quickly and cleanly," said Greg Garry, an analyst at Dataquest in San Jose, Calif.

Sun's latest move puts it in the company of vendors such as Cisco Systems, Inc., Network Appliances, Inc., Netscape Communications Corp. and Novell, Inc., all of which offer caching technologies. □

WEB TRENDS

Software allows pay per view on Web

By Sharon Machlis

THE MAKER of the Internet's most popular audio player has developed software that will allow pay-per-listen and pay-per-view transactions on the World Wide Web.

RealNetworks, Inc. (*www.real.com*) in Seattle said it will demonstrate its new RealSystem 5.0 Commerce Solution in an online charity experiment featuring singer Tori Amos.

Users will be asked to donate at least $5 before seeing some Amos music videos. Proceeds from the four-week event, which kicks off Dec. 18, will go to the Rape, Abuse and Incest National Network.

RealNetworks partners include CyberSource in San Jose, Calif., and Open Market, Inc. in Cambridge, Mass. Prices for the RealServer electronic-commerce software start at $10,000.

RealNetworks said more than half a million copies of RealPlayer 5.0, the new version of its client-side audio and video player, are being downloaded from its Web site each week. □

Quaker State turns to IT

▶ *Quaker State in operations, systems overhaul*

By Patrick Thibodeau

AN IT OVERHAUL under way at Quaker State Corp. in Irving, Texas, is key to the company's back-to-basics strategy.

The $1.2 billion motor oil maker had gone into businesses as far afield as insurance sales and gas exploration. Quaker State last week said it will restructure to cut between $15 million and $20 million in costs. The cost-cutting moves are part of a longer-term plan to concentrate on consumer car care products.

To aid in the corporate makeover, Quaker State will spend $30 million to install SAP America, Inc.'s R/3 enterprise resource planning package. Quaker State also is working with IBM to make its supply chain systems more efficient.

Suresh V. Mathews, Quaker State's chief information officer, said the SAP project is part of a broader effort to replace a variety of mainframe systems with Windows NT-based client/server applications. And the company is installing Unix systems with intranet and extranet capabilities, he said.

It is through those moves, due to be completed by the middle of next year, that Quaker State hopes to bring a unified face to its customers in areas such as retailing, company officials said.

Quaker State has been selling off noncore businesses, such as its insurance and gas exploration divisions, and buying consumer car care and bumper-to-bumper products.

Last month, for instance, Quaker State bought the Rain-X line of automotive glass care products from Unelko Corp. in Phoenix and sold its truck lighting company, Truk-Lite, Inc., to Penske Capital Partners in Detroit. In August, it acquired the windshield sun-protection product line from Axius Holdings LP in Moorpark, Calif. The prices of those transactions weren't disclosed.

Quaker State's Suresh Mathews says the new systems will help reduce inventory pileups

Those rapid changes have created problems for Quaker State. Systems for different business units weren't integrated. Customers, such as major department stores, received separate bills. And Quaker State's inventory formed a backlog. And there was a year 2000 problem for some systems.

Mathews said Quaker State wants the new systems to do what the company can't do now: handle one order and one invoice for customers such as retail giant Wal-Mart Stores, Inc. Because Quaker State's ordering, billing and supply-chain systems are disjointed, the company was forced to send multiple bills to its customers. The inefficiency also causes costly inventory pileups.

Quaker State last year posted $13.7 million in profit on revenue of $1.2 billion. In its most recent fiscal quarter, Quaker reported about $303 million in revenue, up 5% from the year-ago quarter. But net income in the most recent quarter decreased from $6.75 million last year to $5.3 million.

Not all the savings at Quaker State will come from the information systems changes, observers noted. "They have to consolidate some other manufacturing and distribution operations," said Eric Boyce, an analyst at First Dallas Securities, Inc. in Dallas. "They've made some nice niche acquisitions, but they've only been able to integrate a few of them. They need to kind of clean up these loose ends before they move ahead with any additional acquisitions."

Analysts said Quaker State has been struggling for years to increase profitability against tough competition. "They are in business with a bunch of gorillas," said Alvin D. Silber, an analyst at Herzog, Heine, Geduld, Inc., a New York brokerage firm. Its competitors include Pennzoil Products Co. and oil and gas giants such as Texaco, Inc. and Exxon Corp.

Quaker's success remains to be seen. "Whether they can make any progress, or whether it is largely defensive to just keep earnings from dropping, is the real question," Silber said.

Quaker State hasn't had success changing strategies in the past, one analyst said. "They sort of have been struggling along," said Lysle R. Brinker, vice president and senior petroleum analyst at John S. Herold, Inc., a consulting firm in Stamford, Conn. "They seem to change their strategy every few years. But if you look at the stock price, it's gone nowhere, so that tells you how effective they've been." □

Leading the charge

When Suresh V. Mathews became CIO of Quaker State, he found more than dilapidated legacy systems. He found clout.

Mathews is leading a major information restructuring at Quaker State, as announced last week by the company (see story at left).

Prior to Quaker State, Mathews, 44, worked at PepsiCo, Inc. as CIO of its Kentucky Fried Chicken restaurant chain. He also headed a business re-engineering project for PepsiCo's Taco Bell and Pizza Hut eateries.

But when PepsiCo announced its restaurant division spin-off earlier this year, Mathews said, the rules of his job changed. Instead of meeting regularly with PepsiCo's CEO, he reported to the chief financial officer — "seven layers from the CEO's position."

It wasn't the place from which to run a major project. "If you try to drive the train from the back of the cars, you're not going to be able to see where you're going to end up," he said. It's important to "have a seat at the table" where the decisions are being made, Mathews added.

At Quaker State, Mathews said, he is back in the forefront, reporting to CEO Herbert M. Baum. Shortly after joining Quaker State, he met with his staff to review the IT project backlog. If a job didn't have a substantial impact on revenue, costs or customer service, it was scrapped. "We were able to declare upward of 50% of the backlog dead in one afternoon," he said.

—Patrick Thibodeau

IBM devises technology to disinfect computer bugs

By Laura DiDio

DIRECT FROM THE Internet to your PC — a computer virus?

It could happen. In any given month, about 35 PCs out of 1,000 will be infected with a computer virus. That is double the number of client infections just a year ago, thanks to the Internet's rise as a means to spread infections, according to the National Computer Security Association, Inc. (NCSA) in Carlisle, Pa. The NCSA based its findings on a survey of 300 Fortune 1,000 companies.

IBM last week said it has devised a new technology to halt viruses. Immune System for Cyberspace, due sometime next year, will thwart viruses "by detecting them and disinfecting an entire network within 10 to 15 minutes, much faster than the bugs can spread," said Jeff Kephart, manager of IBM's Anti-Virus Research Group.

"We'd love to have a product that lets us get ahead of viruses," said Phil Easter, technology strategist at Greyhound Bus Lines, Inc. in Dallas. "Now, we often have no idea that we've got a virus until it does some damage. And once we discover a virus, our administrators can spend days isolating it and disinfecting the network," Easter said.

"The Internet and [its] applications are much more effective conduits for spreading viruses."
– Jeff Kephart, IBM

IBM's Immune System for Cyberspace will be a combination of PC- and server-based software and support service, Kephart said. It will consist of an enhanced version of IBM's existing Anti-Virus Client, which sells for $42. It will provide businesses with automated antivirus detection, analysis and disinfection capabilities. And it will be capable of ferreting out both known and unknown viruses across an enterprise network.

Once administrators detect a virus on a PC or network server, they can transmit a secure copy of the rogue code via electronic mail or the Internet back to IBM's Anti-Virus Research Center in Hawthorne, N.Y.

There, a series of minicomputers and mainframes will use artificial intelligence to replicate the virus, analyze its properties and construct an electronic vaccine, Kephart said.

The administrator can also upload the same prescription across the enterprise and disinfect the network in a matter of minutes, IBM officials said. "The virus writers haven't gotten smarter. It's just that the Internet and the applications being developed for it are much more effective conduits for spreading viruses," Kephart said.

"It probably would work, but I don't know if that's something we would want to be real hot to jump on right away," said Keenan Sugg, NT network systems administrator at Cellular One Washington/Baltimore in Greenbelt, Md.

Sugg said his biggest security threat is viruses from E-mail attachments. He said the company uses a product called ScanMail from Trend Micro, Inc., and it "seems to catch everything."

Today, spreading a virus requires human intervention, such as opening a document. "But in the very near term, intelligent agents can automate the process, downloading a virus that can be replicated on millions of systems within days or hours," Kephart said.

That already has begun to happen. The three newest viruses on the NCSA's Top 10 list, the WM.Concept, NYB and Natas, are among the most prevalent, accounting for nearly 75% of the attacks reported this year, said NCSA director Bob Bales.

That trio is especially pervasive because the viruses can penetrate and reproduce by hiding within E-mail attachments and documents. "Most users who are infected by macro viruses like the WM.Concept don't see changes or degradation in PC performance, so they don't even know their system's been infected," Bales said. □

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Domino's supply chain overhaul to save dough

▸ *Customizes PeopleSoft manufacturing system*

By Randy Weston

DOMINO'S PIZZA, INC. perfected getting a piping-hot pepperoni pizza with extra cheese to people's front doors in 30 minutes.

Now the Ann Arbor, Mich.-based franchiser is turning that speedy delivery philosophy on its internal operations, with a $16 million overhaul of its distribution and supply-chain management system.

What makes the project unique is that Domino's is taking software designed for manufacturing and customizing it for its retail-oriented needs.

Domino's, which already runs Pleasanton, Calif.-based PeopleSoft, Inc.'s human resources applications software, is adding PeopleSoft's full suite of enterprise resource planning (ERP) software, including financials and supply-chain management.

"Most people don't think of Domino's as a manufacturer," said James Krasner, Domino's vice president of supply-chain management. "But it is critical to our stores that we operate like that to provide a high level of service."

Domino's makes its fresh dough at 25 distribution centers across North America that feed into 4,300 stores on street corners in nearly every city.

SPEED COUNTS

Napkins, cleaning supplies and even cheese keeps, but dough doesn't. It has to be delivered to stores within 48 hours of an order.

"Our biggest concern is the management of inventory through the system," Krasner said. Domino's fills 12,000 dough orders per week and wants to improve the percentage of correct orders from 98.5% to at least 99%.

Also, Krasner said he wants to cut down on inventory, reduce labor costs and free up franchise owners and managers to sell pizza rather than take care of paperwork.

"That got us in the market of [ERP] systems. But what we found was that there were not that many out there that really focused on distribution-only businesses," he said.

"In North America, retail is a highly saturated market," said Jessi Tran, a retail and consumer goods analyst at GaR, Inc. in Mountain View, Calif. "Now that many of them have taken care of their internal operations, they are starting to focus on what the customer wants From the time a customer orders a pizza, they know all the way back to their suppliers what they need. Retailers are starting to turn to ERP systems to meet those needs."

And ERP vendors are starting to offer their own packaged products for retailers. SAP AG launched a retail version of R/3 earlier this year, and Oracle Corp. is moving in that direction. PeopleSoft is integrating software for Intrepid Systems, Inc. in Alameda, Calif.

Tran predicted that within the next two years, most of the ERP vendors will have packaged applications that will provide that functionality to a variety of industries.

Even though Domino's is implementing the latest version — PeopleSoft 7.5 — that version still lacks all the functionality Domino's needs, such as an automated order generator.

But for now, companies such as Domino's are on their own to mold the technology to their needs.

The next step will be for Domino's to move its stores to filling orders based on an expected need rather than an actual need.

Eventually, Domino's corporate headquarters wants to take over the ordering process altogether, using forecasting applications so individual store owners won't need to worry about placing orders at all.

"We are still unclear whether there is a demand for that [from franchisees]," Krasner said. "There's something about a franchise organization that they like a little independence."

At best, Domino's will have a mixed environment, planning for stores that want headquarters to do the work and letting others place their own orders.

Because Domino's operates on a profit-sharing model, any savings from the new system will flow back to franchise owners and their bottom line as an incentive.

The project is still in the planning stages, but Domino's is shooting for a payback in three and a half years. Financial applications are expected to be completed by the end of next year. Distribution centers are expected to go live with the manufacturing modules by the end of 1999. □

Domino's James Kresner: "Our biggest concern is the management of inventory through the system"

BY THE NUMBERS

- Company: Domino's Pizza
- Location: Ann Arbor, Mich.
- Stores worldwide: 5,560*
- Scope of operations: 54 countries
- 1996 sales: $2.8 billion
- 1996 net income: $50.6 million

*1,300 are independently owned franchisees

RELATED LINKS

For these and other related links, point your browser at www.computerworld.com/home/online97.nsf/All/971215domino1links

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— Manufacturing Systems: Information Technology for Manufacturing Managers www.manufacturingsystems.com/

— Manufacturer's Information Net http://mfginfo.com/home.htm

Sequent boxes add Fibre Channel

▸ *Bundled switch gives users clustering power*

By Tim Ouellette

SEQUENT Computer Systems, Inc. is leading the charge of Unix server vendors shipping Fibre Channel interconnect technology instead of SCSI to beef up clustering and data access.

Beaverton, Ore.-based Sequent last week announced that its NUMA-Q 2000 Unix servers would now ship with a Fibre Channel network switch already installed.

Fibre Channel lets shops get over the distance, device connection and performance limitations of the standard SCSI connections used today.

The inclusion of a Fibre Channel switch, as opposed to an adapter card, gives users multiple, redundant paths to their storage systems for high data availability.

That is especially important for Sequent shops that plan to build large-scale clusters based on the high-scalability Non-Uniform Memory Access (NUMA) architecture.

"With NUMA, Fibre Channel will be one of the driving requirements when you get into multiple nodes," said Sean Derrington, a storage analyst at Meta Group, Inc. in Stamford, Conn. As the configurations get more complex, hubs and switches will be a requirement, he added.

For example, Burlington Coat Factory Warehouse Corp. has one NUMA-Q 2000 server running in production with the new switch, and two other Sequent servers will be added to the mix soon.

DISK ARRAYS

"We really whale on our disk farm," said Mike Prince, chief information officer at the Burlington, N.J., retailer. "Our I/O rates could bury most disk arrays out there. But with the addition of the switch, we more than doubled our old transaction processing rates."

Prince's plan is to create one clustered disk farm accessible by all three servers. That would help avoid the CPU bottlenecks that occur when disk subsystems are tied to a specific server.

Sequent offers 6- and 16-port Silkworm switches from Brocade Communication Systems, Inc. in San Jose, Calif., in the NUMA-Q 2000 servers. The additional cost is about $1,800 per port.

Analysts said deals like that with leading server and storage vendors are the best way for users to get the benefits of Fibre Channel switching.

For example, Digital Equipment Corp. plans to add Silkworm switches to its StorageWorks disk arrays.

And Sun Microsystems, Inc., Hewlett-Packard Co. and Data General Corp. have specific Fibre Channel switch plans in place. □

Burlington Coat's Mike Prince: Fibre Channel is a way to get rid of I/O bandwidth

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FRANKLY SPEAKING

Whom do you trust?

FRANK HAYES

THESE DAYS, a lot fewer people would put the Social Security Administration on their list of trustworthy organizations. Social Security's own inspector general just blasted the agency's lax protection of what's supposed to be confidential, computerized information about 200 million Americans.

Since 1991, more than 250 Social Security employees have been caught selling, forging or otherwise misusing data. That data has been used to activate stolen credit cards, obtain Social Security cards for illegal aliens and collect undeserved Social Security checks.

Those weren't firewall failures or hacker attacks. Like more than 80% of data thefts, they were done by insiders — people who were trusted by the designers of their computer systems.

Social Security has data-protection policies, but they're only policies on paper. They're not enforced by Social Security's applications. Instead, those systems give crooked employees fast and easy access to data without leveraging the same computer power to restrict access to records and control improper use.

Real protection needs to be built in to your applications.

And struggling with year 2000 and other problems, Social Security hasn't made data-protection a high priority. That's understandable — but now it's a big embarrassment.

Of course, that couldn't happen at your company, could it? You'll never see an embarrassing newspaper story about some bad apple in sales or customer service or even IS misappropriating information about customers or business partners, then peddling it to a competitor or doing some insider trading, will you?

You'll never have your CEO and a horde of lawyers descend on your IS shop, looking for explanations and fixes and, most of all, a scapegoat for that kind of legal and public-relations nightmare — right?

Chances are, like Social Security, your IS shop has merely computerized business processes without building in extra security to limit who looks at what data and to log it when they do.

Worse still, you may be creating a new set of data-related problems on the Internet. Right now, your company's World Wide Web site is probably collecting data about potential customers. And you probably don't even have a policy — much less good control — on what information is collected and kept, and how it's protected and used.

If those decisions are being made on the fly by webmasters, Web page designers and Web application developers, they could come back to bite you if that information is misused.

Some organizations take their data-protection responsibilities very seriously. For example, HMO giant Kaiser Permanente's patient data is completely computerized, but every application rigorously controls and logs data access by health care employees. But then, patient confidentiality has long been a legal hot spot for medical practices.

Ty, Inc. became a convert the hard way. The company that makes Beanie Babies just added warnings and blocked use of full names and electronic-mail addresses on its Web site. The site is aimed at kids but also attracts adult collectors of Beanie Babies.

Ty made the changes after a children's-media watchdog group complained that it was easy for outsiders to collect personal information about kids from the site. The company didn't want to risk government action, potential lawsuits and even more bad publicity.

Neither should you. You need policies right now that outline what information your internal and Web applications collect about customers. You need policies that define how that information will be used.

And you need to start building real protection for that information into your applications. Because the last thing you want are headlines, lawyers and — especially — customers saying you can't be trusted. □

Hayes is Computerworld's West Coast bureau chief. His Internet address is frank_hayes@cw.com.

SHORTS

The war on cybercrime

Officials from eight nations last week agreed to develop faster ways of tracing the origins of attacks that come through on computer networks and to tighten measures for protecting information stored in computers. The U.S., the U.K., Germany, Japan, Italy, Canada, France and Russia also agreed to make more trained law enforcement officers available to fight high-tech crime and to review their respective legal systems to ensure that computer-related crimes are identified in legal statutes.

Times of London in Web dispute

The Times of London has notified a World Wide Web news site, News Index, that the site is violating the paper's copyright by including *Times* stories in its index and linking back to stories at the *Times* site, according to Sean Peck at News Index. He disputes the charge, saying that his site's indexing, summaries and links fall under allowable "fair use." Peck said he believes that some of the *Times*' complaints are technical and added that he hopes to work with the paper to resolve its objections. News Index might remove the *Times* from its service while the problems are being addressed.

EC tackles 'net copyright

The European Commission last week proposed bringing copyright rules in line with the requirements of the Internet. The proposal offers reproduction rights to copyright owners, giving them rights to authorize or deny licenses for copying their protected works downloaded from the Internet or stored in a computer. The plan wouldn't recognize the rights-holder's exclusive control over so-called temporary, ephemeral or incidental copies made while surfing the Internet.

IS spells 'intense stress'

A new survey of 500 information systems managers from the U.S. and the U.K. shows that 65% feel that rising stress at work is affecting their personal lives. The managers' professional lives are beset by failing projects, fast-changing technology and an inability to find good employees, according to the survey conducted by Ronin Corp. in Princeton, N.J., for Sequent Computer Systems, Inc. in Beaverton, Ore. The vast majority said they felt the challenges would mount: 95% saw their data volumes more than doubling in the near future.

Unisys expands services

Continuing its transition from a mainframe supplier to a services company, Unisys Corp. is getting into the business of managing expense reports and handling travel arrangements. The services introduced this week include UniTrex, an online expense report processing and payment outsourcing service, and a Web-based travel reservation service called UniRes that lets corporate travelers make their own reservations online.

More adult shoppers hit Web

Adult Internet users in North America grew by 15% in the past six months to total more than 58 million. That is according to the preliminary results of a survey by the CommerceNet trade group and Nielsen Media Research. Web users account for 48 million of the total number of Internet users, with almost 10 million transacting some form of business and the rest logging on for electronic mail or chat groups. Although more people are shopping online, 54% of Web users in the survey of 9,000 people age 16 and older said they are unlikely to make future online purchases.

Winstar acquires GoodNet

Winstar Communications, Inc. in New York is acquiring GoodNet, an Internet backbone provider in Phoenix, for $22.5 million. The new entity, WinStar GoodNet, will be a part of WinStar Broadband Services. GoodNet has a national network of Asynchronous Transfer Mode switches and offers a variety of services to hundreds of commercial clients. Winstar serves business customers and other carriers.

Apple: Tough road ahead

Apple Computer, Inc., in its latest Securities and Exchange Commission filing, reported that its financial decline could continue into the second quarter of fiscal year 1998. In recent months, the company's sales have suffered because of fire sales of Macs by clone makers Motorola, Inc. and Power Computing Corp., which was knocked out of the Mac look-alike business by Apple. The company's net sales fell 28% in 1997 compared with 1996, a showing Apple attributed to customer concern about future prospects, viability of the Macintosh platform and competition. Apple also said its new online store has racked up $12 million in sales since its Nov. 10 launch.

SHORT TAKES **Electronic Data Systems Corp.** in Plano, Texas, hired all 600 staffers from **Yamaichi Information Systems** after parent company Yamaichi Securities Co. failed last month. ... **Novell, Inc.** released the NetWare 3.2 Enhancement Pack, an add-on package for NetWare 3.12 networks, in an effort to continue supporting an installed base of 60 million 3.x NetWare users. ... **Adobe Systems, Inc.** in San Jose, Calif., plans an announcement next month of new forms of technology that it hopes will get its Portable Document Format into the enterprise market.

Web sites work to offer personal touch

By Sharon Machlis

ALTHOUGH THE popular press is full of stories about Internet privacy fears, some surfers still want World Wide Web sites to better track their lives.

"The most common complaint we get is, 'Hey, I fly this trip every week. How come you don't know yet?'" said John Samuel, managing director of distribution planning at American Airlines in Fort Worth, Texas. But all the data mining and user tracking, "[is] an incredibly hard thing to do," he said.

Users can already access their balance of frequent flier miles at the airline's Web site (*www.americanair.com*). American plans to add to that site a feature in which users will — if they had traveled recently — see a mention of that flight and a query about whether it had been OK. "Personalization is going to be what keeps people coming back," Samuel said.

For example, it would be useful if an online travel site knew not only that a user liked aisle seating, but that the user liked aisle seats except on long overnight flights when the preference is for window seating and sleeping, said Richard J. Siemborski, vice president of the interactive travel group at American Express Corporate Services in New York.

THE ONLINE CUSTOMER

Internet customers can be well worth keeping. Early Internet customers at Wells Fargo & Co. tend to be younger, more wealthy and more loyal than conventional customers. "The net potential is worth a fortune to us," said Dudley Nigg, executive vice president of the San Francisco-based bank.

Once customers began using Wells Fargo's online service, their bank balances increased dramatically as they consolidated money from other sources into one online account.

But despite the benefits of personalization, Wells Fargo is still working to bring that concept to the Web.

"We are struggling with creating compelling interfaces using personalized data," Nigg said. "I think that's still eluding most organizations."

At an Internet World '97 panel on electronic commerce last week in New York, speakers agreed that airlines, credit-card companies, banks and other such businesses where consumers are used to turning over personal data are different from, for example, general news and entertainment sites.

The panel also acknowledged that customer relationships would suffer if customer data from company sites was revealed to outsiders without full and complete disclosure.

Nigg said one way to build customer trust and loyalty is to offer products from competitors.

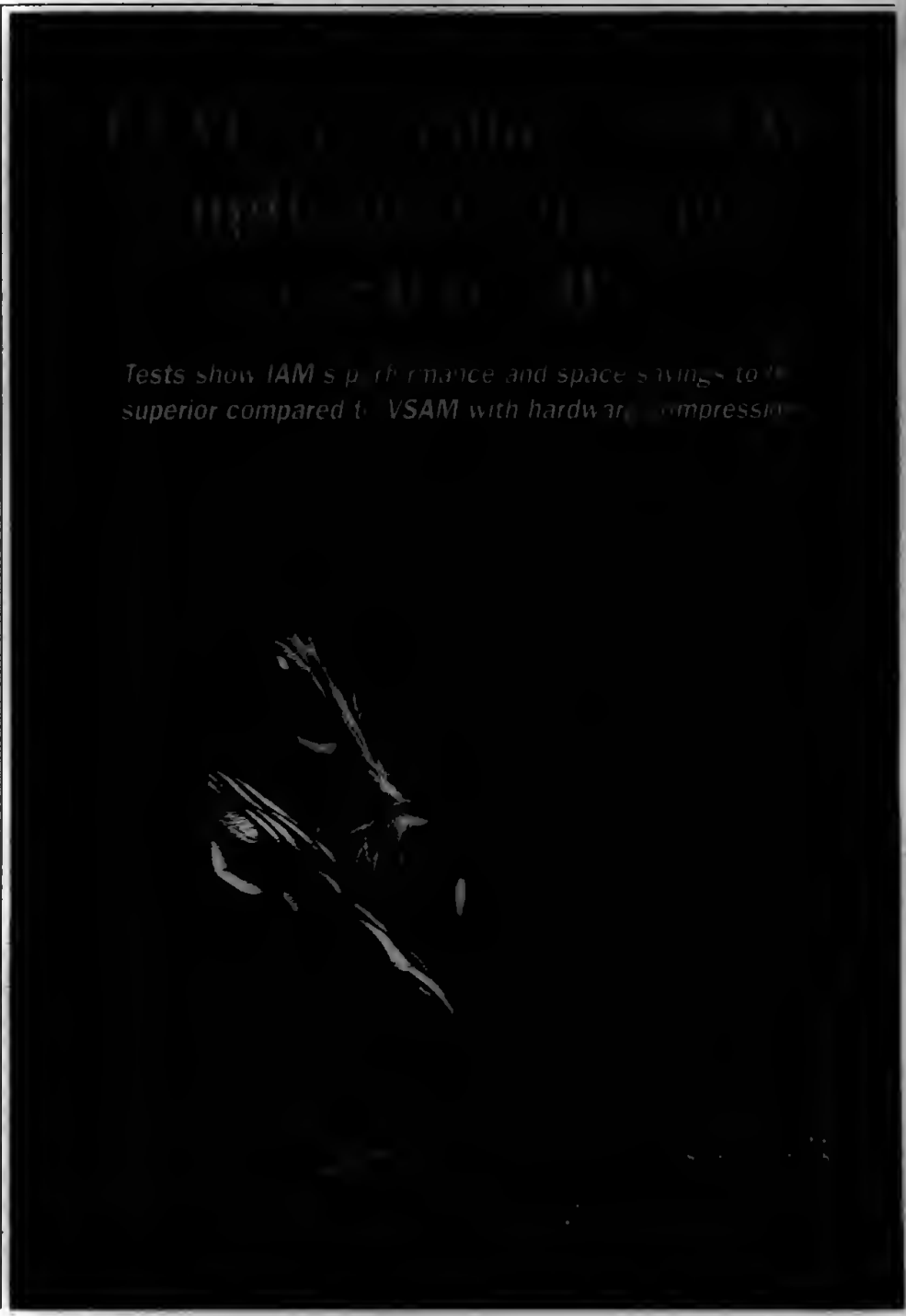
That might seem like marketing heresy, Nigg said, but savvy consumers shop around. And he would rather that the shopping be done at the Wells Fargo site, he said. Wells Fargo, an online banking pioneer, is likely to offer an array of outside financial services on its site by the end of next year, he said.

Patricia Seybold, president of Patricia Seybold Group, a consultancy in Boston, agreed that offering competitive products could build customer loyalty and trust for a site. Offering convenience could build goodwill and add business in the long run, she said.

Few banks are turning profits with online banking, "but the economic model for us is looking pretty impressive," Nigg said. Costs per transaction are minuscule — 1 cent on the Internet vs. 27 cents at an automated teller machine and $1.07 at a branch, he said.

The costs for the Internet site have stayed constant even as customer usage has grown.

New technologies that boost efficiencies have saved money even as the bank required more computing horsepower, Nigg said. □



Users divided on direct intranet posting

▸ *Microsoft plans to provide Web power in next Office release*

By Gordon Mah Ung

IN A BID TO revive "dead" intranets, Microsoft Corp. plans to give users of the next version of Office the ability to post directly to their company's site, eliminating the need to separately convert Word and Excel files into HTML.

Officials at the Redmond, Wash., company said a survey of corporate customers showed that several underuse their intranets because of the time it takes webmasters to convert documents into Hypertext Markup Language (HTML) for posting to the World Wide Web.

"We're seeing some failures, what we're calling 'dead webs,' crop up everywhere," said Matthew Price, Office group product manager. By making tools such as Word and Excel able to save and edit files in HTML, users could post directly to intranets, he said.

The response from users was mixed. While some said it could help eliminate a step, others said it could create havoc if administered improperly.

Olav Hanrath, senior information manager at Ontario Hydro in Toronto, said the change would benefit his firm. Ontario Hydro uses Office 97 for its intranet, and users must maintain both the familiar Word .doc files and HTML files.

Ontario Hydro had five people converting documents for the company and still wasn't able to keep up. The delay in posting documents led people to stop using the intranet. That was part of the motivation for the utility to switch to the more HTML-friendly Office 97 from Office 95. Office 95 required clunky plug-ins to allow HTML editing, whereas Office 97 lets users simply "save as."

POWER TO THE PEOPLE

What: Microsoft's next release of Office.

Features: It will elevate HTML to the level of Microsoft Office binary files. The files will retain embedded information, such as version control and printer settings, giving documents the ability to "round trip" from an application to intranet and back with all the settings intact.

When: Expected late next year or 1999; no release date from Microsoft.

"Like the old sales expression goes, we cut the middleman out," Hanrath said. Users now save HTML versions of documents to a server that is published by a webmaster who just checks links.

But Kevin Hamilton, chief information officer at Media News Technologies, a subsidiary of Garden State Newspapers in Colorado, said giving end users too much power could create a mess.

"There are just too many repercussions for giving people that power at the desktop level," Hamilton said. Everything from libel to the look and feel and style has to have some control from a central point, he said.

Jim Burks, engineering manager at Harrah's Entertainment, Inc. in Memphis, said the company controls the chaos by having only certain users act as control points for posting to its intranet.

"We're not just letting anyone post to it, but we're trying to get around a central authority. That's why we're limiting it to a few people. We don't want to slow down the information process by running it through someone else." □

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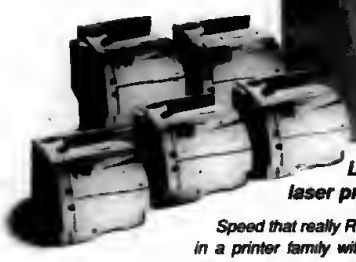

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DOJ bars forced browser bundling

CONTINUED FROM COVER 1

Microsoft ... operating system software (including Windows 95 or any successor version thereof) on the condition, expressed or implied, that the licensees also license and preinstall any Microsoft Internet browser software (including IE 3.0, 4.0 or any successor versions thereof) pending further order of the court."

In handing down his ruling, Jackson said that forcing Microsoft to unbundle Internet Explorer 4.0 wouldn't impose a substantial burden on the company because the two software packages already are sold separately.

In a somewhat split decision, the judge refused to find Microsoft in contempt of a 1995 antitrust consent decree and ruled that the Redmond, Wash., software company didn't have to pay fines of $1 million per day.

But Jackson also sent a clear signal that he is prepared to do a very thorough job.

He appointed a special judicial officer, law professor Lawrence Lessig, to consider the facts and legal precedents that applied to the case.

Lessig, who specializes in computers and cyberspace, must submit his report by May 31, 1998.

USER IMPACT

While both sides claimed victory, users said the decision has little impact on them in the short term. They said they want options.

Most users contacted by *Computerworld* agreed it was appropriate for the government to step in and prohibit Microsoft from forcing vendors to install Internet Explorer 4.0 as the default PC browser.

But they also said the natural law of selection will win out and that Microsoft's tough and aggressive sales tactics will keep the competition on its toes.

And that means better products, the users said.

"Microsoft was wrong to force the use of [Internet Explorer] 4.0 as an embedded part of the Windows operating system," said Rick Shope, manager of PC planning and technology at Nations Banc-CRT, a division of NationsBank Corp. in Chicago.

But still, he said he liked the idea of being able to link directly to Web pages from a file in his local drive without having to open another application.

Doug MacNair, production manager at The Redhook Ale Brewery, Inc. in Seattle, said the integration between Internet Explorer 4.0 and Windows 95 is so tight that it is unlikely people would use any other browser.

"They are shoving their product down your throat," he said.

"Where [a company like Microsoft] becomes overly successful for a long period of time, I think it is appropriate for the referees in the marketplace — in this case, the government — to step in and ensure that the potential for competition still exists," said Dennis Courtney, chief information officer at Dunlop Tire Co. in Amherst, N.Y.

POSITION OF STRENGTH

John Bogaerts, a senior manager of information systems at Conference Plus, Inc. in Schaumburg, Ill., concurred that Microsoft has "taken advantage of its dominant marketing position" but noted that it has strong products.

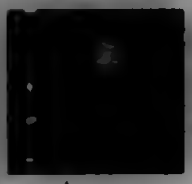
"Yes, Microsoft has the upper hand, but they worked their butts off to become dominant. Anyone that wants to compete with them should build a better operating system and a better browser," Bogaerts said.

Tim Miner, public health adviser at the Centers for Disease Control and Prevention in Atlanta, said, "When the dust settles from all this, I don't think the suit will have slowed Microsoft down one bit."

"All they have to do is get their million-dollar programmers to insert options into the operating system, and they'll keep going almost as though this never happened," Miner said. □

Senior editor Jaikumar Vijayan and senior writer April Jacobs contributed to this report.

IS weighs in on ruling



"It will have zero impact on us. We'll do what we want to do and will pick the best browser. The bottom line is most consumers don't care which browser they use as long as it works."

– JOHN BOGAERTS, IS MANAGER, CONFERENCE PLUS

"We have to make sure here that our applications run in both Netscape and [Internet Explorer] environments. Microsoft shouldn't have forced PC makers to bundle [Internet Explorer] 4.0 with Windows 95; if that hadn't happened, I think it would have been a nonissue."

– RICK SHOPE, MANAGER OF PC PLANNING AND TECHNOLOGY, NATIONS BANC-CRT

"Microsoft has done an excellent job in their business model. However, where one becomes overly successful for a long period of time, I think it is appropriate for the referees in the marketplace – in this case, the government – to step in and ensure that the potential for competition still exists. I think Microsoft, ultimately, is the victim of its own success."

– DENNIS COURTNEY, CIO, DUNLOP TIRE

Mainframes for rent aid in year 2K testing

By Tim Ouellette

IT'S YEAR 2000 gain without as much of the year 2000 pain.

Big iron vendors are rolling out more flexible mainframe purchase options so users can ramp up their capacity for testing changed code — without breaking the bank.

Amdahl Corp. in Sunnyvale, Calif., last week announced plans to offer users short-term rental deals on new mainframe systems that are dedicated to testing converted year 2000 code.

With TimeMachine 2000, users can isolate and test their code on the latest mainframe technology without locking themselves in to a long-term hardware lease.

Called TimeMachine 2000, the program offers users a new Amdahl Millennium CMOS mainframe for rent on a quarterly basis, with additional disk storage and software available.

That means users can isolate and test their code on the latest mainframe technology without locking themselves in to long-term hardware leases if they don't want to own another system.

Art Louise, an assistant vice president at Group Health, Inc. in New York, said users who need to add capacity fast probably would be receptive to Amdahl's program.

That is especially true for shops that didn't budget for the excess capacity demand that year 2000 testing carries, noted Carl Greiner, an analyst at Meta Group, Inc. in Stamford, Conn.

MORE PROCESSING

To handle the extra load for year 2000 testing, the average data center will need to increase mainframe processing capacity in MIPS by 9% and disk storage by 13%, according to estimates by International Data Corp. (IDC) in Framingham, Mass.

So a shop that has 500 mainframe MIPS would need approximately 45 MIPS of additional testing capacity.

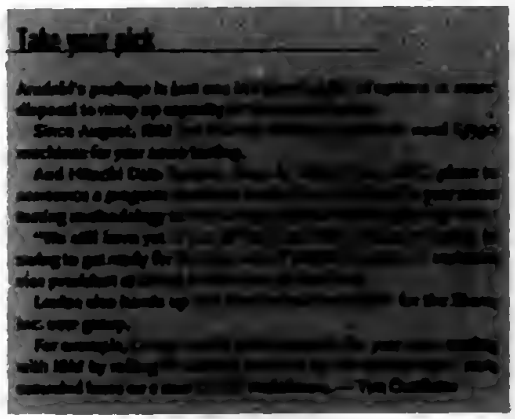
Under the TimeMachine 2000 plan, rental of a 45-MIPS Millennium would cost $15,915 per month, said Chuck Foley, Amdahl's vice president of systems marketing.

That compares with typical industry charges of $19,500 per month for a 12-month mainframe lease and $14,500 per month for a 24-month lease, he said.

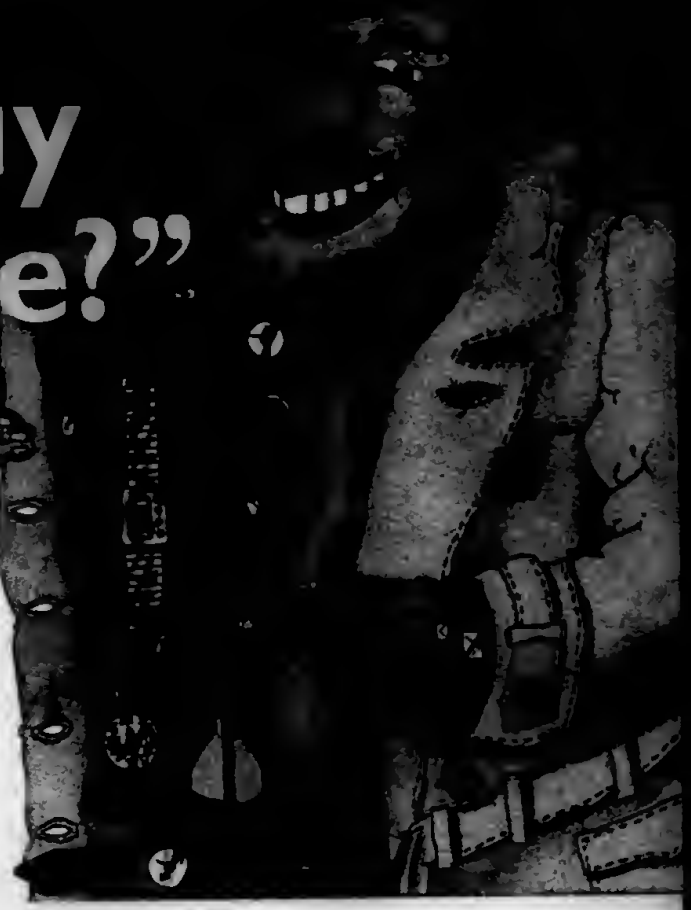
"This appears to be unique for a manufacturer to offer new equipment in this kind of flexible format," said Tom Oleson, an IDC analyst.

Still, many shops are choosing to just upgrade their existing machines with additional processors and do the testing there, noted Charles Jumonville, a data center manager and member of the AFCOM large systems user group.

That can simplify software licensing issues compared with using a separate box, he said. □



"Psst . . . Wanna Buy Some Time?"



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Novell catching up with Java support

By Laura DiDio
NEW YORK

NOVELL, INC. last week outlined its framework for supporting Java applications across NetWare servers and services.

At the Internet World '97 trade show here, Novell said its forthcoming "Open Solutions Architecture (OSA) will let software developers build applications for NetWare and Novell Directory Services that are Java-compliant and World Wide Web-enabled. OSA is a set of open libraries and interfaces from Novell and its third-party partners that will be embedded in IntranetWare.

The Java-based initiative will save independent software vendors development time and money and get Java applications to market more quickly, Novell officials said.

Six users and analysts said the plan enables Provo, Utah-based Novell to keep pace with products such as OS/2 Warp Server and Windows NT Server in the emerging market for server-based Java applications.

"Java is the application server language in the future, and this is the obvious and righteous direction for Novell to take, and it may propel some users who are sitting on the fence to upgrade to IntranetWare," said Josh Turiel, director of information services at Ad Life Marketing Services, Inc. in Norwood, Mass., and president of the Greater Boston Network Users Group.

Eric Schmidt, Novell's chief executive, recently told *Computerworld* that OSA will remove any barriers to writing Java-based applications for NetWare servers. "All of our protocols are language-independent, and the [application programming interfaces] are suitable for either C or Java," Schmidt said.

User group President Josh Turiel: "This is the obvious and righteous direction for Novell to take"

Schmidt declined to offer a timetable for delivering specific OSA components but said the first pieces of OSA would be embedded in NetWare 5, code-named Moab. The product is slated to ship next summer.

Users and analysts said Novell's timing is right.

"Server-based Java applications don't really exist yet; the market is still in its infancy, so I'm glad to see Novell making a concerted effort to focus on Java and position themselves as a player," Turiel said.

Bob Sakakeeny, an analyst at Aberdeen Group, Inc., a Boston consultancy, said OSA will level the Java playing field and "give Novell users another reason to consider upgrading to IntranetWare."

The OSA infrastructure pieces will include the Java Virtual Machine Version 1.1.3 to allow businesses to run Java applications or "servlets" on NetWare. It will also include an object request broker and trader services.

That combination of facilities will let the Java applications find Java components across an enterprise network.

OSA will also include a just-in-time compiler that automatically compiles Java code within NetWare to speed user access to Java server-based applications, Schmidt said. □

Sybase brings IQ into the fold

By Craig Stedman

SYBASE, INC. is making good on promises to turn its decision-support database into less of an odd duck.

Sybase, in Emeryville, Calif., last week released a version of the analysis-oriented Sybase IQ software that supports stored procedures and uses the same programming interfaces and graphical management tools as its flagship Adaptive Server Enterprise database.

The decision-support database, renamed Adaptive Server IQ, previously confronted users with its own SQL programming and command-line management techniques. Beta testers of the new IQ 11.5 said the increased unification with Adaptive Server Enterprise should make their lives easier.

TOUGH TO MANAGE

Managing IQ with written commands created obstacles, said Brent Sanderson, information technology manager at Utah's finance division in Salt Lake City. "You could still get done what you needed to do, but it took a few more steps," he said.

The addition of stored procedures should reduce the technical hassle of making canned reports available to 800 users statewide, Sanderson said. The finance division has built a 30-Gbyte data warehouse on IQ, and it runs a delinquent-payment application and other programs on Adaptive Server Enterprise.

Compusearch, a unit of Detroit-based R. L. Polk & Co. that sells demographic information, waited for IQ 11.5 to arrive before implementing the decision-support database to increase its data analysis capabilities.

Linking IQ to Adaptive Server Enterprise "was kind of a back-door thing before," said Mark Kiminski, senior vice president of information technology at Compusearch. Now the ties are more seamless, he added.

But Sybase database sales have continued to slide in the aftermath of big losses last year and some earlier technical failings. "They really haven't been successful outside of the installed base for a long time," said James Pickrel, a financial analyst at Hambrecht & Quist LLC in San Francisco. □

As modem standard nears, users eye 56K upgrades

By Kim Girard

WITH A 56K BIT/SEC. modem standard nearly ironed out, users said they are more confident about the prospect of upgrading next year.

Earlier this month, industry leaders came closer to a goal of modem interoperability. The parties reached a tentative agreement after a yearlong struggle over how to make devices based on the X2 standard from 3Com Corp. and U.S. Robotics interoperate with those based on the K56flex technology pushed by Rockwell Semiconductor Systems and Lucent Technologies, Inc.

The cross-platform promise of a standard could revive sagging modem sales — attributed to user confusion and corporate unwillingness to invest in 56K bit/sec. modems without a common industry implementation, analysts said.

"We wouldn't think of doing any wholesale replacement of what we've got until there's a standard in place. If I know all of the users are going to be using one standard and the server is using the same thing, I'll upgrade," said Richard Hoffman, lead applications engineer at American Red Cross in Falls Church, Va.

Under Federal Communications Commission rules, 56K bit/sec. modems can support up to 53K bit/sec. connections when downloading and 33.6K bit/sec. when users send information. And users will get that performance only if their modem is compatible with their Internet service provider's equipment or supported by the corporate server with digital hookups.

Along with 3Com, Diamond Multimedia Systems, Inc. in San Jose, Calif., and Cirrus Logic, Inc. in Fremont, Calif., are promising software upgrades to the 56K bit/sec. standard, called V.pcm (pulse code modulation), by the first and second quarters of next year, respectively. The standard is expected to be ratified in September and will be a hybrid of X2 and K56flex.

"A lot of regular corporate upgrades haven't happened," said Geoff Ballew, an analyst at Dataquest in San Jose, Calif. "People have been waiting for a standard. There's risks when there are two standards."

Ballew called the tentative agreement "significant progress." A draft of the International Telecommunications Union standard is due in January, according to 3Com, which holds 52% of the U.S. modem market.

But that standard doesn't guarantee full 56K bit/sec. performance, one user said.

"What we found is the quality of the lines wouldn't support it," said Wally Dean, CEO of CityNet, a nonprofit organization charged with building an interactive network for the city of Cupertino, Calif. The project included use of 3Com's 56K bit/sec. modems. "The best we ever got was 33.6K," Dean said.

Estee Lauder Co. also bought 56K bit/sec. modems for about 20 of its 400 remote users. But Robert Horn, a LAN analyst at the New York-based company, said employees quickly became frustrated with performance from poor-quality telephone lines or a lack of Internet provider support for X2 technology.

"We found they didn't give us the throughput they claimed," Horn said. He said he won't buy more 56K bit/sec. modems until the standard is final.

Although the standard should improve Internet provider support for 56K bit/sec. modems, it is unlikely that phone line problems will be solved as easily. □

56K MODEM SAGA

February – U.S. Robotics rolls out 56K bit/sec. modems using the company's X2 technology, which nearly doubles the speed of Internet connections over telephone lines

March – Motorola ships a 56K bit/sec. modem using Rockwell Semiconductor's K56flex technology

June – 3Com and U.S. Robotics merge

December – Industry leaders make tentative agreement on interoperability standards for X2 and K56flex

January 1998 – New standard expected to be finalized

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Sun offers users a method to bypass Microsoft's Java

By Sharon Gaudin
NEW YORK

DEVELOPERS at Internet World '97 here last week seemed eager for Sun Microsystems, Inc. to enable them to circumvent Microsoft Corp.'s version of Java for users who are running Internet Explorer 4.0.

At the show, Sun released Java Activator, software designed to be downloaded to users' machines to give them a Java-compatible alternative to Microsoft's Java Virtual Machine (JVM). Microsoft's JVM comes bundled with the Internet Explorer 4.0 browser.

A Java virtual machine is software that interprets Java code so that it can run on different operating system platforms.

Activator gives webmasters the choice of how they want end users to view their World Wide Web pages — with Microsoft's or Sun's JVM.

"It solves problems for my customers, and that solves problems for me," said Sharam Sasson, president and CEO of Extensity, Inc., an Emeryville, Calif.-based company that builds Java-based software. "It takes away the guessing game of what browser is being used and what that browser supports." Extensity is one of the first developers to use Activator.

Sun's latest strike in its ongoing feud over Java comes about a month after the company filed a breach of contract lawsuit against Microsoft. Sun, in Mountain View, Calif., is suing Microsoft, in Redmond, Wash., for failing to make its JVM in Internet Explorer 4.0 compliant with Sun's specifications. Sun also alleges that Microsoft is trying to disrupt Java's adoption because the cross-platform language fuels corporate users' ability to use non-Microsoft platforms.

Microsoft denies the charges and claims that its JVM is the most compatible virtual machine on the market.

Frank Rimalovski, a product line manager at JavaSoft, Sun's Java subsidiary, said a version of Activator for Netscape Communications Corp.'s Navigator browser is expected in the first half of next year. The Netscape version should give users with older versions of Navigator access to the latest JVM.

"This is the kind of thing that needs to happen," said Bill Shek, director of development services at Charles River Laboratories, Inc. in Wilmington, Mass. "I'm putting applications out on the Internet, and I don't want what browser people use to be a problem. I can't afford for it to be a problem." □

How webmasters can use Sun's new Java Activator:

1. They can add HTML tags to Web pages with Activator Converter tool
2. The tags instruct Activator to scan a user's system to check for Sun's JVM
3. If the JVM isn't there, the user will receive a digital notification asking if the user wants the alternative JVM downloaded
4. Once the JVM is downloaded, the user will be notified of JVM upgrade options

Netscape expands net administration

▸ *Mission Control allows central management of intranet applications*

By Carol Sliwa
NEW YORK

NETSCAPE COMMUNICATIONS Corp.'s Mission Control client administration software is being extended to let corporate users manage intranet and extranet applications, the company announced last week here at Internet World '97.

"IS departments want management tools, and until now, Netscape was at a disadvantage in relation to the competition because they were missing a tool to manage all intranet and extranet applications."
– Mark Levitt, IDC

The new Mission Control Console software, featuring a Java-based user interface, will let administrators manage everything from user access privileges to automatic software updates and client/server configuration information.

The information is stored in a directory server that conforms to the Lightweight Directory Access Protocol (LDAP). Whenever a change needs to be made to user access privileges for a particular application, for example, it can be made in one place — the directory server.

"If an IT manager today is running E-mail and a Web server and a directory server and a network file system, it's entirely possible that you're looking at four different consoles at the same time," said Carl Howe, an analyst at Forrester Research, Inc. in Cambridge, Mass. "The poor IT manager doesn't need more work to do and more windows to look at."

While other companies talk about a directory-driven infrastructure, Netscape is one of the few companies, along with Novell, Inc., actually doing it, Howe added.

"IS departments want management tools, and until now, Netscape was at a disadvantage in relation to the competition because they were missing a tool to manage all intranet and extranet applications," said Mark Levitt, an analyst at International Data Corp. (IDC) in Framingham, Mass.

"Now they're not only providing a tool, but a tool that can be used to manage all third-party application as well, based on the LDAP standard," Levitt said.

EASIER ACCESS

To make it easier for companies to take advantage of the management capabilities, several software makers are embedding Netscape's Directory Server into their applications. They include Hewlett-Packard Co., Silicon Graphics, Inc., Diffusion, Inc. and OpenConnect Systems, Inc.

For applications that aren't LDAP-enabled, Netscape will provide a Mission Control Software Development Kit that helps developers embed the directory server technology.

Mission Control Console, which is included with Netscape's SuiteSpot server software, and the Mission Control Software Development Kit, available separately, are due in the first half of next year.

Pricing for the Mission Control development kit will be announced in the first quarter of next year. □

Java tools may manage any networked devices

By Patrick Dryden

AS THE WORLD gets more wired, little Java management tools could run everywhere — from servers, applications and relay points to portable telephones, automobiles and even home and office appliances — to monitor service and simplify maintenance.

That's the future Sun Microsystems, Inc. forecast last week with the launch of several building blocks designed to enable the spread of self-managed devices in corporate networks or anywhere on the Internet.

For the first time, a reusable collection of program modules, called JavaBeans, can manage diverse services and not just pieces of a network, Sun said. The new Java Dynamic Management Kit lets information systems developers, vendors and service providers create distributed agents that can send warnings about problems and possibly fix them automatically.

Paris-based Alcatel, for example, plans to use the technology to care for millions of Internet Screen Phones and send new capabilities out to the roaming users.

"This approach is truly exciting because it pushes management intelligence down in the network, off-loading a lot of tasks that bog down support staffs," said Bill Gassman, an analyst at Gartner Group, Inc. in Stamford, Conn.

In another year, JavaBeans could become more pervasive than agents and managers based on the Simple Network Management Protocol, according to Gassman.

But he cautioned that questions remain about the ease of developing that kind of Java tool, about the size of really useful modules and about the likelihood of adoption industrywide.

DIFFERENT APPROACH

Acceptance of this approach to Java management could be a big problem, according to Eric Hindin, an analyst at The Yankee Group in Boston.

Sun is telling everyone who has already built or adapted management tools to the World Wide Web to backtrack and use this new architecture, Hindin said. It would have been more impressive six months to a year ago, he said.

"This may be easier, but I'm not sure who would retool now," Hindin said. "I'd feel more comfortable recommending this approach to users if Sun had more development partners stand up behind them." □

MCI boosts 'net performance guarantees

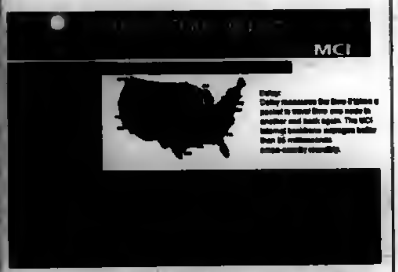
By Matt Hamblen

INTERNET SERVICE providers are trying to attract business customers with better performance guarantees, integrated billing services and other features.

The latest entry in the service guarantee sweepstakes comes from MCI Communications Corp. in Washington. MCI last week said at Internet World '97 in New York that it would credit an amount equal to a full day of service for any outage greater than 10 minutes on an Internet port. That applies to customers of MCI's Virtual Private Network and direct access services.

"That's not a bad guarantee," said John F. Cunnane, manager of distributed systems at Insurance Services Office, Inc. in Pearl River, N.Y.

Cunnane has been distributing insurance data to thousands of sales agents nationwide via toll-free service and banks of modems, but he said he is considering setting up a virtual private network (VPN) managed by a carrier or Internet service provider.



MCI's Web site will let users check the speed of connections on backbone links

Insurance Services also is about to require any carrier soliciting its business to agree to its sliding scale of guaranteed network uptime before it will even sit down to negotiate a deal.

For instance, the company wants a network to operate at better than 98.5% or else refunds begin. If the network falls below 93% uptime in a given month, Insurance Services wants a refund for the full month.

NOT ENOUGH

But several network managers said a refund for even a short outage is somewhat meaningless compared with the damage done to vital business functions.

Many network managers also "would rather not have to deal with getting the credit for an outage," said Ron West, a network manager and president of the Communications Managers Association in Morristown, N.J.

"We're in the business of making money, and when it comes to sending vital data over networks, you have to be very careful what vendor you use and what technology," said Andrew J. Stratford, vice president of Congress Financial Corp. in New York.

Even though Internet service providers are offering more guarantees and security over VPNs, "I would still say there is going to be a degree of skepticism in using the Internet for financial transactions," Stratford said.

Still, analyst Barbara Ells at Zona Research, Inc. in Redwood City, Calif., said MCI's one-day credit for 10 minutes downtime is "the most impressive of a whole bunch of [service providers] competing in this area."

And MCI's guarantee is fairly safe, analysts said, considering it pertains only to the MCI backbone and not the local loop, where cable cuts are more likely to occur.

MCI also announced several details of its VPN service, including a global roaming feature that allows a remote user working abroad to use Microsoft Corp.'s Connection Manager to automatically configure a dial connection to a nearby telephone number. MCI also established a World Wide Web site (*http://traffic.mci.com*) for users to check the speed of connections on backbone links. □

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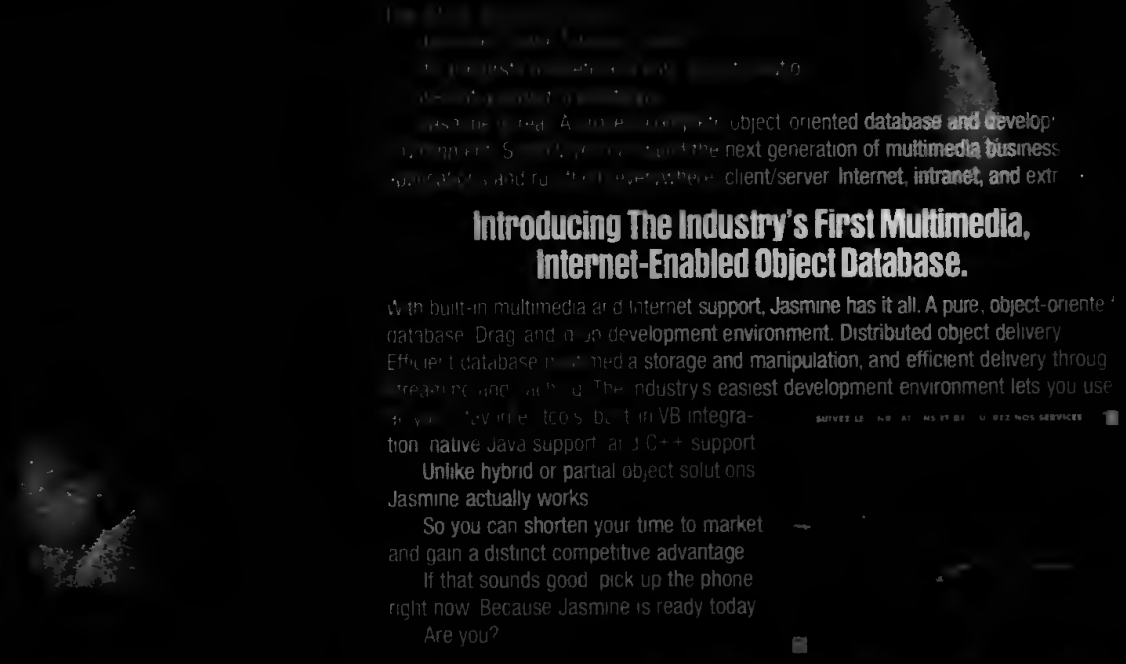

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High-rise uses bandwidth to lure tenants

By Matt Hamblen

DMITRY GRINBERG is the kind of CEO who doesn't much care how his company accesses the Internet, as long as the access is fast and cheap.

Which is a big reason Grinberg moved his New York-based software company, Dynamo Development, Inc., to a business high-rise with ready-to-use Rate Adaptive Digital Subscriber Line (RADSL) service.

RADSL is a version of Asymmetric Digital Subscriber Line (ADSL), which adjusts the rate of bandwidth to compensate for noise over a circuit. DSL technology uses conventional copper wire without repeater devices and takes advantage of existing phone lines.

Analysts warned that ADSL may not be appropriate for all businesses because it allows much higher bandwidth down from the Internet than up to it. Large business users might need more bandwidth upstream than downstream, however, to send large files to other offices.

Rather than the 56K bit/sec. access available via modem, Dynamo can get Internet access speeds as high as 512K bit/sec. using the variable-bandwidth RADSL connections.

Another attraction was the floor space in the building, which is in Manhattan's emerging Silicon Alley. The rent is half that for offices at some other downtown buildings, under a government incentive program.

"A fast Internet connection was one reason we got into the building. That and lower rent," Grinberg said. "It's much better than 56K. I don't really care if it's T1, XYZ or DSL, as long as somebody maintains it and the speed is good."

HUMMING ALONG

Another tenant in the building attracted by RADSL service is Tri Star Web, Inc., a World Wide Web hosting service that has 800 clients. The company has a dozen employees and nine servers attached to the RADSL service, which operates at 12M bit/sec.

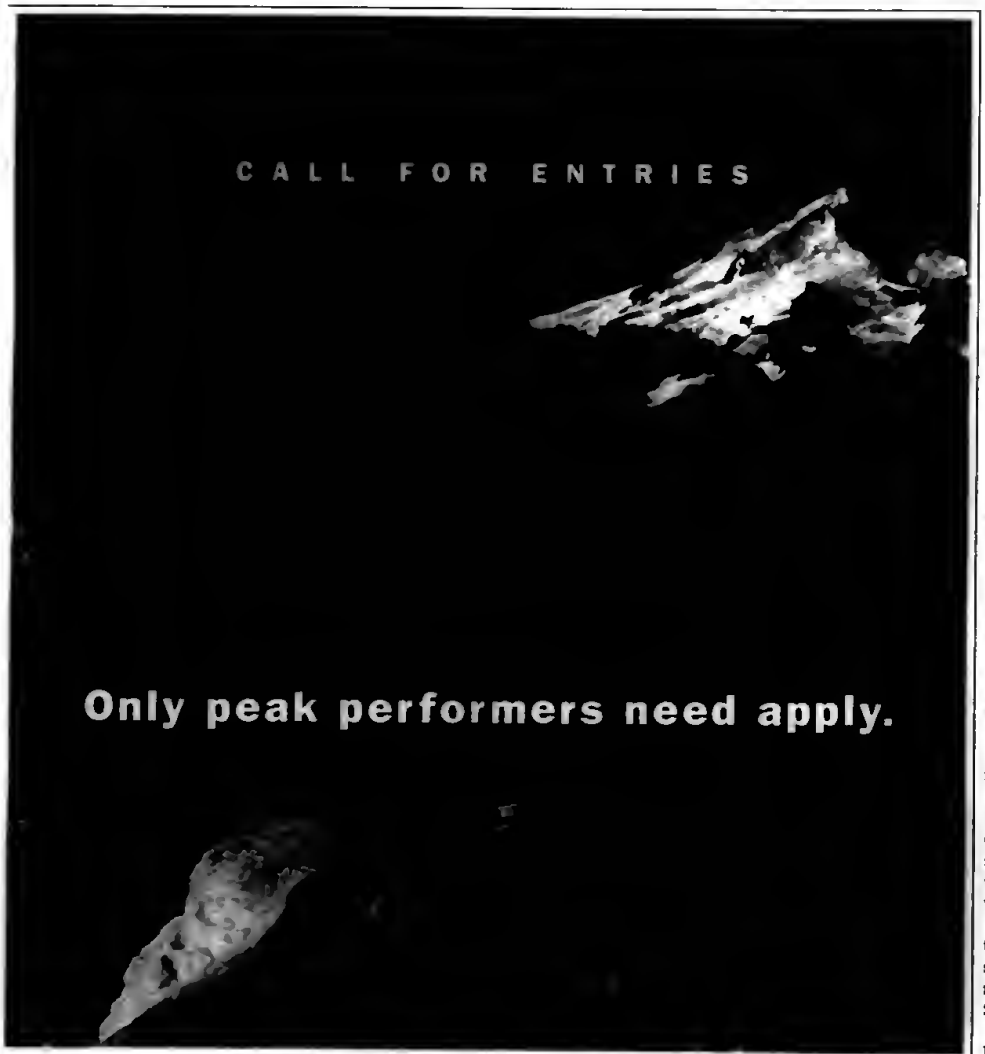
"We used to host in a T3 environment, and this is much faster," said Tri Star President Alan Shimel. "We're humming along right now." Tenants can increase their bandwidth as needed at extra cost. Shimel said he is getting the equivalent of T1 bandwidth for $600 per month — a third of the cost some carriers charge for full T1 service.

Thorn Communications, Inc., an Internet service provider in New York, provides RDSL service to the building and to a half-dozen other commercial high-rises in Manhattan.

Thorn is working with Newmark & Co. Real Estate, Inc. in New York and Paradyne Corp. in Largo, Fla., which have installed the equipment in central rooms in the high-rises out of sight of building tenants.

"It's a pretty smart move by Paradyne to start selling to businesses in high-density areas like New York," said John Girard, an analyst at Gartner Group, Inc. in Stamford, Conn.

Analysts said the Paradyne projects in New York are the only large ADSL installations in commercial high-rises, although many service providers and carriers are testing the technology. □



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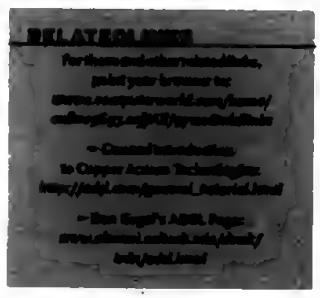

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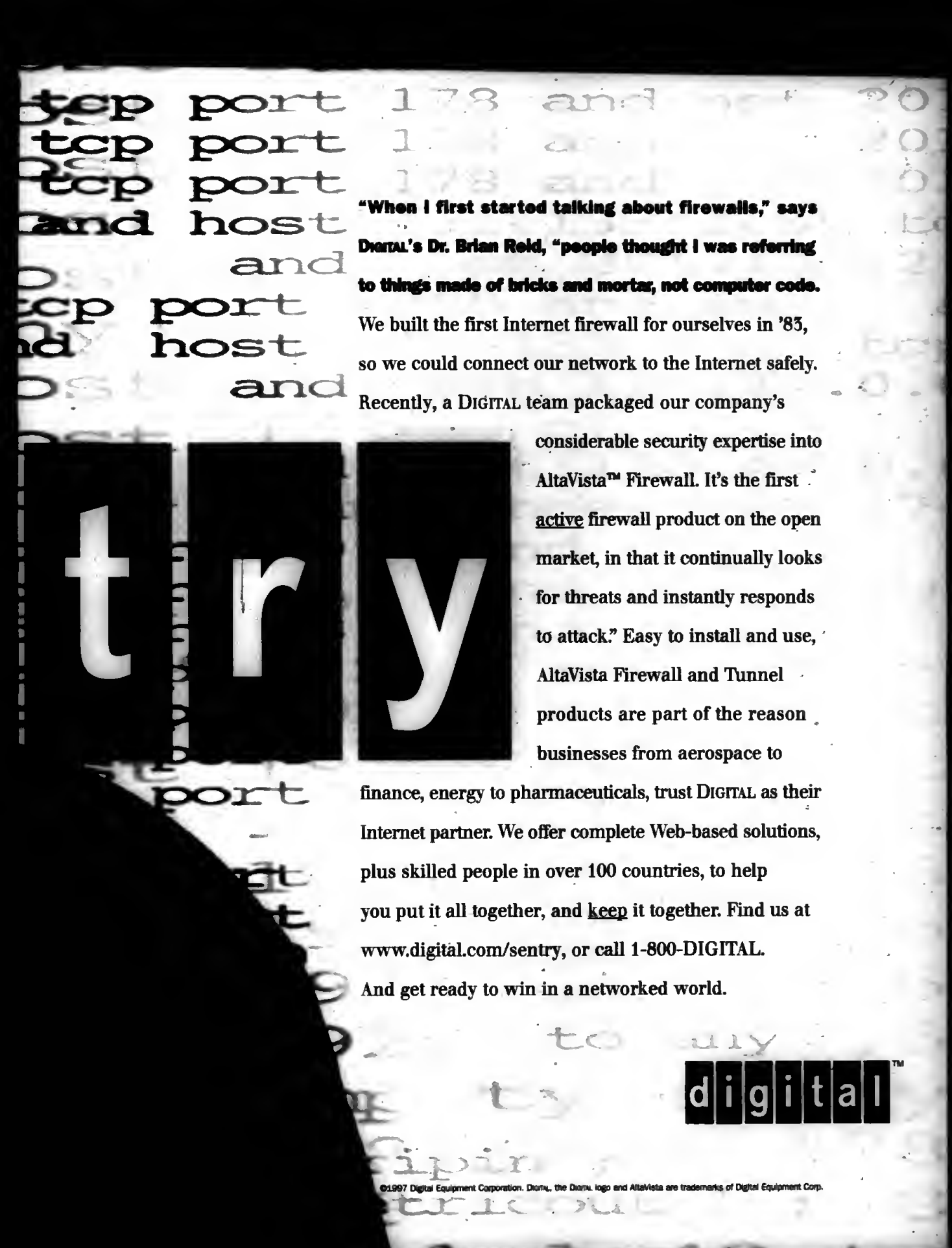

"When I first started talking about firewalls," says DIGITAL's Dr. Brian Reid, "people thought I was referring to things made of bricks and mortar, not computer code. We built the first Internet firewall for ourselves in '83, so we could connect our network to the Internet safely. Recently, a DIGITAL team packaged our company's considerable security expertise into AltaVista™ Firewall. It's the first active firewall product on the open market, in that it continually looks for threats and instantly responds to attack." Easy to install and use, AltaVista Firewall and Tunnel products are part of the reason businesses from aerospace to finance, energy to pharmaceuticals, trust DIGITAL as their Internet partner. We offer complete Web-based solutions, plus skilled people in over 100 countries, to help you put it all together, and keep it together. Find us at www.digital.com/sentry, or call 1-800-DIGITAL. And get ready to win in a networked world.

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Informix calls for backup

▸ *Seeks ties to packaged application vendors*

By Craig Stedman and Randy Weston

EMBATTLED Informix Software, Inc. increasingly is looking to packaged application vendors to ease user concerns about its financial staying power.

The database maker next month plans to start pushing its sales force to let client/server vendors such as The Baan Co. and Lawson Software, Inc. take the lead sales role with more customers. The goal is to grease database sales to users who otherwise might be leery of betting on Informix.

But it isn't clear how much special treatment Informix can count on, even though many application vendors would rather do business with it than with database kingpin Oracle Corp., which also sells applications.

BAAN BACKS OFF

Dutch vendor Baan, with U.S. headquarters in Menlo Park, Calif., canceled anoounced plans to make Informix the default database with its applications. The reason: Users' database choices were spread too broadly to make aligning with one vendor worthwhile.

And Lawsoo officials said recent application buyers have gravitated to Oracle databases even though Informix is the Minneapolis company's preferred choice.

For Clark Material Handling Co. in Lexington, Ky., close ties with Baan made signing on as a new Informix customer a lot easier last June, just after Informix reported the first in an ongoing string of quarterly losses.

> **"We felt like if worse comes to worse, maybe Baan will bail [Informix] out."**
>
> **– Jerry Bull, CIO, Clark Material Handling**

"We felt like if worse comes to worse, maybe Baan will bail them out," said Jerry Bull, chief information officer at the forklift maker.

Clark plans to switch its mainframe-based financial and manufacturing systems to the Baan/Informix combination next year. Early testing with a dozen users has gone smoothly, Bull said. "We're certainly not stressing it yet, but so far, so good."

But not everyone has been wowed. A-dec, Inc., a dental equipment maker in Newberg, Ore., began running Baan's applications on Informix in April. Four mooths later, it switched to an Oracle database because of chronic performance problems.

"We were just getting killed," said Keith Bearden, information services manager at A-dec. Informix kept promising a fix, "but we decided we couldn't wait," he added. Now A-dec has more than 200 users going against Oracle without any throughput hitches.

Steve Maysonave, vice president of global partners at Menlo Park-based Informix, said A-dec's problems were "an isolated incident," caused partly by customization of the Baan software "that didn't map to what we had done in our standardized configurations." Multiplexing issues that also contributed were fixed in a late August database release, Maysonave said.

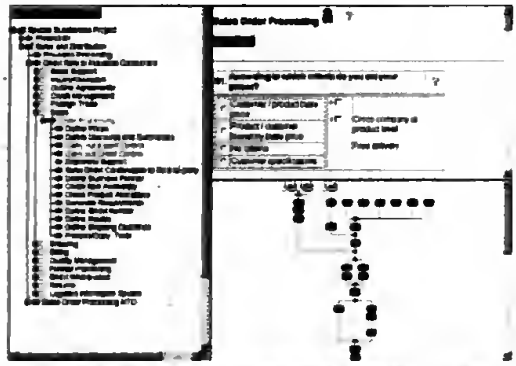
EASIER COMMISSIONS

The vendor's ability to close deals "did slow down while people went into wait-and-see mode" prior to a restatement of earnings and the disclosure of a $111 million third-quarter loss in November, Maysonave said. To encourage more leaning on application vendors, Informix is changing policies so salespeople doo't have to make a database sale themselves to get the highest commissions, he said.

Lawson and Informix just signed a new deal to jointly target markets such as retail and health care.

But Mark Galloway, vice president of product marketing at Lawson, said Informix's problems took a toll on customer confidence in recent months. On big deals signed by Lawson during the past 90 days, most buyers "decided not to go with the anxieties" and chose Oracle instead, he said. □

Tool eases R/3 implementation



SAP's Business Engineer 4.0 configures a simpler road map for implementing and switching on R/3 modules

By Randy Weston

SAP AG IS making it easier for users to model business processes and map out implementation strategy of the R/3 enterprise resource planning system.

Enhancements to Business Engineer 4.0 include an easier-to-use business configurator — which is available with a HyperText Markup Language interface — and vertically oriented versions of Business Engineer.

The business configurator includes an online questionnaire that asks users about the specific business processes their company uses or wants in R/3.

After users answer the questions, the configurator lays out a road map for implementing and switching on R/3 modules.

"With most application packages, you take a base of functionality, then build it outward," said Harry Tse, an analyst at The Yankee Group in Boston.

"SAP tends to require you trim back what functionality you don't need. So the Business Engineer is doing a good job at narrowing down the objectives [of a project] and hiding the complexities and unnecessary business processes from users," he said.

ENTERPRISE RESOURCES

Tse said the tool is only part of the implementation process.

"This is a rough framing, to use home-building terminology," Tse said. "This is also not replacing the implementer. If you think you just scope through the Business Engineer and then turn a key and R/3 works, it does not."

Users will still need to carefully review the processes, change their business practices to match the new processes and switch on the software systems according to the configurators, which act as guides.

Central Michigan University in Mount Pleasant used an earlier version of the Business Engineer to install its R/3 system.

KEEPING CONTROL

Cindy Vautrin, manager of information systems for business and finance at the public university, said the configuration process helped her office keep the project within its original confines.

"We tried to purposely keep the scope reasonable," she said. "We found many [functions] that would have been helpful to us, but we decided to try to keep a fairly narrow scope so that we could achieve the things we wanted in the time frame we wanted."

Chuck Studer, vice president of information technology at $120 million construction material maker ChemRex, Inc. in Shakopee, Minn., also kept to a set plan but found during the mapping process additional functionality that could be added later.

"We labeled things we want to do in the future while scoping the original project," he said. "We scoped out phase two of the project at the same time as phase one."

Business Engineer 4.0 will ship at the end of the year. □

Cisco plugs Token Ring's ATM gap

Cisco Systems, Inc. users with Token Ring networks will be able to communicate with servers on Asynchronous Transfer Mode (ATM) backbone networks thanks to new software from the networking vendor.

With the LAN Emulation (LANE) software loaded onto a switch or router, a PC with a Token Ring adapter can exchange data with a server on an ATM network.

That is important because many Token Ring users have ATM backbone networks.

It is easier to migrate from Token Ring to ATM than from Token Ring to 100M bit/sec. Fast Ethernet because the latter can require changes to applications and procedures, said Tom Nolle, president of CIMI Corp., a consultancy in Voorhees, N.J.

"Frankly, I'm surprised Cisco hadn't done this before," Nolle said.

"They need Token Ring LANE to sell ATM to Token Ring shops. That's the market IBM has been focusing on and Cisco should want to go after as well," he said.

Although Ethernet users can migrate to Fast Ethernet and eventually Gigabit Ethernet, Token Ring users' migration path is to ATM.

A Token Ring user looking to migrate to Fast Ethernet would have to make changes to his bridging scheme and frame size.

For example, Token Ring uses Source Route Bridging while Fast Ethernet uses Spanning Tree.

Cisco plans an expansion module for its Catalyst 5500 stackable Token Ring switch. It also announced LANE software for its Catalyst 5000 and Lightstream 1010 switches and its 4500, 4700, 7200 and 7500 router lines.

The Catalyst 3500 ATM expansion module is shipping now for $4,495.

Token Ring LANE support for the Catalyst 5000 and Lightstream 1010 switches as well as the 4500, 4700, 7200 and 7500 routers will ship next month.

— Bob Wallace

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Year 2000 tests raise licensing issues

By Thomas Hoffman

A few companies that have started testing their year-2000 software fixes have run into a snag: software licensing disputes with vendors. Most of those disputes are resolved amicably, though, according to a new report.

One problem is that companies may need to test the code on a bigger processor than the current software license allows.

For example, some customers that added 400 MIPS or more to their CPUs for year 2000 testing have been forced to fork over $1 million to $2 million in additional licensing costs, according to an upcoming report from Meta Group, Inc.

But so far, the number of disputes has been very small because only a few companies have started full-scale testing. About 90% of the licensing quarrels are being resolved amicably between vendors and users, the Meta Group report said.

"When [software vendors] get caught hiking licensing fees, they often back away because they understand the legality of doing that is questionable," said Carl Greiner, an analyst at the Stamford, Conn.-based market research firm.

Some user companies that want additional copies of system software for testing purposes only "are being asked to pay for second licenses, and they're not happy about it," said Leon Kappelman. He is co-chairman of the Society for Information Management's Year 2000 Working Group.

DEFENDING YOUR TURF

Tips to avoid or resolve licensing disputes with independent software vendors over year 2000 testing:

- Meet with the legal department and software asset managers to formulate a strategy.
- Work with legal department to prepare responses to contracts that have vague language.
- When purchasing new software or renewing existing licenses, develop standard language and include it in master contracts.

Source: Meta Group, Inc., Stamford, Conn.

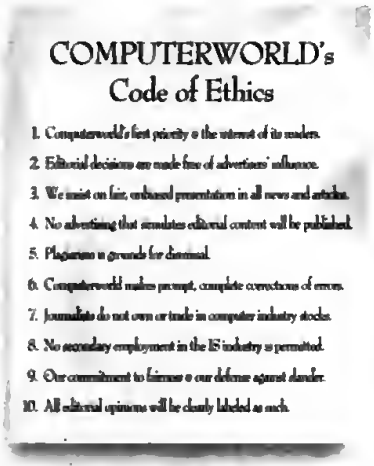
"If someone is just setting up a testing environment, I question whether it's really a good, long-term partnering practice [for vendors] to charge [customers]," Kappelman said.

On the other hand, when user companies upgrade CPUs for year 2000 testing "and plan to keep that CPU, then it's only fair to pay additional licensing fees," said Mike Bougie, a systems programmer at Secura Insurance Co., a $225 million mutual insurance company in Appleton, Wis.

Disputes can also occur when testers need the vendor to provide a "software key" or access code to run the software for dates — such as 2002 — beyond the expiration of the software license.

Mutual of Omaha ran into that problem last year when it wanted to test code for SAS Institute, Inc.'s SAS MVS report writer. Glen Burgardt, a senior systems programmer at the Omaha-based insurer, said the company "ran into some hassles" with SAS as it tried to access code for the report writer beyond its June 1998 license expiration date.

To resolve the problem, Mutual of Omaha's legal department wrote a contract swearing "in blood" that the company would run the code only on the year 2000 partition of its mainframe, Burgardt said. SAS then provided an authorization code that allowed the software to work through June 2000. □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Slowdown hits database king

▸ Oracle revenue hurt by packaged application bundles, rise in NT servers

By Craig Stedman

THE WEAK second-quarter results Oracle Corp. reported last week are further proof that the database business ain't what it used to be.

More and more users are opting to buy databases as part of a bundle with packaged application software, analysts said. Application vendors usually handle those sales and take a cut of the database swag for their trouble.

DATABASE BUSINESS

Even packaged application buyers who still get their databases direct from the Oracles of the world are driving harder bargains because the application is now their top business priority, the analysts said.

And the rise of cut-rate Windows NT servers is helping to choke off the growth of the database money supply because NT databases cost less than the Unix versions they are taking business from.

All of that is catching up to Oracle with a vengeance.

The database kingpin, which had been haughtily lording it over struggling rivals Sybase, Inc. and Informix Software, Inc., fell short of earnings projections in its second fiscal quarter and signaled that the next few quarters also may be weaker than expected.

Database sales were up a paltry 3% from a year ago, making it two straight quarters of single-digit growth for Oracle's flagship software. And the Redwood Shores, Calif., company's high-flying applications fell to earth, growing just 7% after shooting up 96% in the first quarter.

The application slowdown was "alarming" but may just be a short-term anomaly caused by a failure to close some big deals with telecommunications customers during the second quarter, said James Pickrel, a financial analyst at Hambrecht & Quist, Inc. in San Francisco.

Oracle's database business is a bigger concern. "The database companies just aren't in the driver's seat anymore," Pickrel said. "Now, even Oracle can't be put on the sure-thing list." He chopped his projected fiscal-year earnings for Oracle by 20% last week.

HITTING THE WALL

The database market began hitting the wall last year, when revenue growth for nonmainframe products slowed from the 50%-plus rates of the past to just 17%, according to International Data Corp. (IDC) in Framingham, Mass. "It's sort of been like slamming on the air brakes," said Carl Olofson, a database analyst at IDC.

He added that Oracle's slowdown and the sales problems at Informix and Sybase probably make IDC's projected 20% growth rate for this year too optimistic.

Analysts also blame some of Oracle's financial sluggishness on a series of sales force reorganizations and its failure to capitalize on investments in development tools, groupware and other products.

Oracle remains comfortably profitable, and total revenue grew 23% in the second quarter, thanks to its services business. But Wall Street punished the company with a 31% cut in the value of its stock in trading, setting single-day volume records. The stock, which early last week sold above $32 per share, had fallen to just above $22 as of Friday morning. □

Briefs

FileNet rebound bid hinges on merging apps

▸ Company to debut Web wares, simplify lines

By Barb Cole-Gomolski

FILENET CORP., which ran into trouble digesting two acquisitions, will launch a turnaround campaign next month.

The Costa Mesa, Calif., workflow leader will roll out new World Wide Web-based products, simplify its complex product line and announce plans to improve integration among its applications.

EVERY WHICH WAY

"It's been confusing because [FileNet] has high-end offerings, low-end offerings and something in the middle," said Loretta Goralczyk, imaging manager at American President Line Shipping, an Oakland, Calif., shipping company with about 20 FileNet applications.

Under the plan, FileNet will offer back-end software that serves up both documents and images via a World Wide Web browser. A medical claim form is a document, for example, and an X ray is an image. To date, users have had to maintain separate systems to handle these formats.

The integrated approach will make the products easier to deploy and support, Goralczyk said.

FileNet executives also promised to overhaul pricing, which could make the products more accessible to a broader range of companies.

The idea appeals to customers such as Frank Young, chief financial officer at Beacon Health Plans, Inc. in Coral Gables, Fla. Young last year purchased a FileNet document management system to track medical claims. But Beacon wrote its own workflow applications because FileNet didn't offer a package that fit the company's budget, he said.

MAKING IT MESH

FileNet, the largest workflow vendor, has been reeling since the middle of 1996, shortly after it acquired document management software vendor Saros Corp. and Watermark Software, Inc., an imaging company.

"Digesting those companies has been painful," said Lee Roberts, who was named president and chief operating officer of FileNet last April.

Signs of a turnaround already are apparent. In October, the company posted its first quarterly profit for the year, and FileNet has begun to aggressively market its products.

"But the market is still waiting to see if [FileNet] can bring these technologies together," said Gerry Murray, an analyst at International Data Corp. in Framingham, Mass. "If they can do this, they should have a pretty good year." □

FileNet's comeback strategy

1. Announce products next month that give end users access to documents via a Web browser
2. Simplify product line and implement new pricing
3. Deliver software that links FileNet document repository to E-mail systems and client/server applications
4. Improve integration among its workflow, document management and imaging software

"The market is still waiting to see if [FileNet] can bring these technologies together."
– Gerry Murray, International Data

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OPINION

Fall from grace It's not nice to fool Mother Wall Street.

Oracle got that warning branded on its hide last week, as a 4-cent shortfall in expected earnings per share let loose a howling from a wounded Wall Street.

Those measly few cents per share punched the stock down 29%, siphoned $2 billion off Oracle CEO Larry Ellison's staggering personal wealth and turned into a tide of hand-wringing about nearly every technology stock in sight. All this punishment for a company that's still quite profitable but has fallen from the grace of double-digit growth.

Especially entertaining was the sudden case of myopia developed by some two dozen visionary Wall Street analysts, who early last week were still hawking Oracle stock as the perfect stocking stuffer. It seems they were blindsided by Oracle's inability thus far to deal with that chronic condition known as a maturing market, which company execs conveniently forgot to mention while they were rushing out to sell off their own stock.

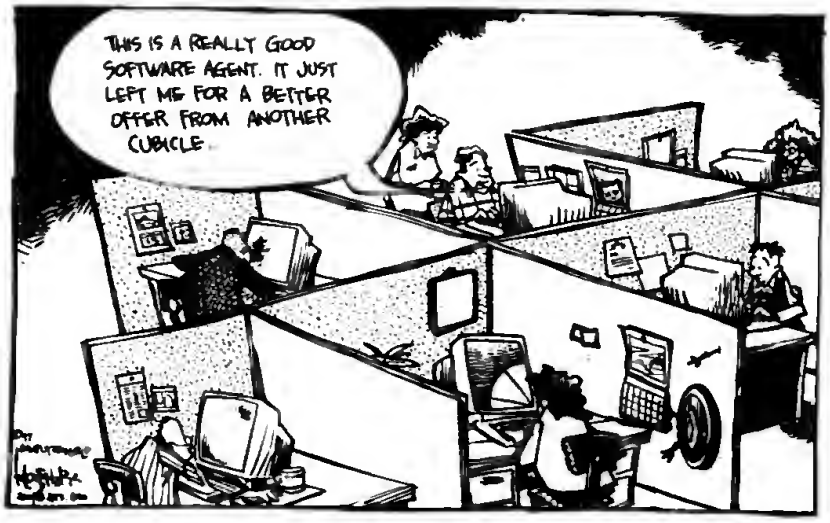
This maturing market issue turns up as predictably as death, taxes and the need to reboot your PC. Every high-tech high-flyer eventually floats back to Earth. The punishing pace of that 35% to 40% anticipated quarterly growth catches up with all of them. And Mother Wall Street is inevitably disappointed.

As our story in this week's issue points out (see page 29), the database business has shifted into low gear. Users are driving harder bargains, buying cheaper Windows NT databases and enjoying multiple choices in a market driven by packaged applications such as SAP's R/3 first and databases second.

Granted, Mother's little darling has given her a few bad moments of late. Oracle's database sales were up only 3% over a year ago, and its applications business rose just 7% over last quarter. That $108 million in business applications sales this quarter looks pretty puny in a global market worth $5.4 billion last year.

No wonder Larry is out there stumping for new customers in the name of network computers. The question now is: Will that make Mother happy again?

Maryfran Johnson, *executive editor*
Internet: *maryfran_johnson@cw.com*



LETTERS

Despite personnel shortage, hiring not good for newbies

I KNOW FROM reading *Computerworld* and other technology publications that the situation with the IS personnel shortage is bad. But I would like to see an article about the people who are trying their best to get employment, but due to changes in hiring and recruiting, are finding it even more difficult to land a job.

I have sent 200 to 300 resumes over the Internet, as well as faxed and mailed resumes. For many of the jobs I have seen, I have the experience necessary for five to eight items in the requirements — but the requirements may be 10 or more. Then to my dismay, I receive an E-mail stating that I do not match any of their listed openings. All this for a job that pays only $35,000 a year.

I am soon to be released from the Navy after 16 years of service, the last two in school for my bachelor's degree in business/information systems. Now I find that because other IS professionals are dictating salary, managers are getting leery of personnel whom they may need to train a little. I will complete my degree in June, but I am not very optimistic that this will help.

Armando Torres Jr.
Fresno, Calif.
jranna88@worldnet.att.net

Don't blame the bimbos

WE AGREE WITH columnist Laura DiDio that "scantily clad booth bimbos" are walking billboards for sexism (CW, Nov. 17). But we were disturbed by the objects of your wrath: The women themselves and their modeling agencies. The real culprits are the vendors and manufacturers that hire them for their booths.

We visit trade shows all over the world, and it's even worse overseas. At a recent computer show in Japan (World PC Expo in Makuhari, September 1997), the booth bimbos were out in force. Guess who had a small army of young Japanese women prancing around in super-short cutoffs and bandanna halter tops? Gateway 2000 of Sioux City, S.D. It was embarrassing. Upon our return, we personally told the Gateway CEO that his company was getting no more orders for computer systems from our company until it changed its exhibit practices worldwide.

> The real culprits are the vendors that hire these women for their booths

Robert C. Hall
Penny Oliver
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Foreign workers not mobile

COMPUTERWORLD'S article "Foreign labor costly, mobile" (CW, Oct. 13) ignores the other side of the story. Foreign software developers come to the U.S. on work permits that are valid for six years only. Most of them apply for green cards in order to remain in the U.S. This process takes more than three years, during which they can't change employment.

They are far from being mobile. During these three years, the law binds the worker to the employer. Paradoxically, it is this bonded status that prompts many workers to switch jobs in the first year or two. The feeling is that one should switch to get the best deal because one is going to be stuck in it for three or four years.

Moneek Sharma
Farmington Hills, Mich.

Kudos to Gillin for refreshing report

I'M NOT often inspired to respond to articles or editorials I find in industry publications these days, but editor-in-chief Paul Gillin's column on "The new legacy" (CW, Nov. 17) was so refreshing, clear and honest that I had to write. His recognition of the "real" talent in PC-based software is equally refreshing, as most of the people with whom I work are unaware that there is any software not made by Microsoft. I'm one of those guys who remembers the early days, and I'm not quite sure what happened. The PC used to be so useful: a wonderful, expressive extension of the "big iron."

Mark L. Boyajian
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mlboyajian@oees.com

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Please complete the questions below.

1. BUSINESS/INDUSTRY (Circle one)
10 Manufacturer (other than computer)
20 Finance/Insurance/Real Estate
30 Medical/Law/Education
40 Wholesale/Retail/Trade
50 Business Service (except DP)
60 Government - State/Federal/Local
65 Communications Systems/Public Utilities/Transportation
70 Mining/Construction/Petroleum/ Refining/Agriculture
80 Manufacturer of Computers Computer-Related Systems or Peripherals
85 Systems Integrators, VARs, Computer Service Bureaus, Software Planning & Consulting Services
90 Computer/Peripheral Dealer/Dist./ Retailer
95 Other _____ (Please Specify)

2. TITLE/FUNCTION (Circle one)
IS/MIS/DP MANAGEMENT
19 Chief Information Officer/Vice President/Asst. VP IS/MIS/DP Mgmt.
21 Dir./Mgr. MIS Services, Information Center
22 Dir./Mgr. Network Sys., Data/Tele Comm., LAN Mgr./PC Mgr., Tech Planning, Administrative Services
23 Dir./Mgr. Sys. Development, System Architecture
31 Programming-Management, Software Developers
41 Engineering, Scientific, R&D, Tech. Management
60 Sys. Integrators/VARs/Consulting Management
CORPORATE MANAGEMENT
11 President, Owner/Partner, General Mgr.
12 Vice President, Asst. Vice President
13 Treasurer, Controller, Financial Officer
DEPARTMENTAL MANAGEMENT
51 Sales & Mktg. Management
70 Medical, Legal, Accounting Mgmt.
OTHER PROFESSIONAL MANAGEMENT
80 Information Centers/Libraries, Educators, Journalists, Students
90 Other Titled Personnel

3. Do you use, evaluate, specify, recommend, purchase (Circle all that apply.)
Operating Systems
(a) Solaris (e) Mac OS
(b) NetWare (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTStep
App. Development Products ❑ Yes ❑ No
Networking Products ❑ Yes ❑ No

4. Do you use, evaluate, specify, recommend or approve the purchase of Internet products and/or services?
❑ Yes ❑ No

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When E-mail greetings shouldn't be warm

Anne McCrory

"Warmest regards" my arse. If I get one more E-mail message from someone I've never met plugging something I don't want, and they have the gall to commandeer this most personal of expressions, I'm going to have a fit.

Let me explain.

Remember when you entered the E-mail fray, and it felt so novel to communicate with people outside the company? (I know it was a long time ago; deep breath, quick reminiscence.)

Don't insinuate a close tie to me – especially if you're sending me spam.

Electronic mail was more personal than faxes or snail mail, but not so intrusive as a telephone call. Conventions quickly evolved: You usually addressed people by their first names, for example, and signed off with — well, there seemed to be different ways. I mimicked my boss and used "Cheers," even though I felt a little foolish (he's British and could get away with it). When the E-mailing public adopted "Regards," I felt much more comfortable. It was businesslike. It was polite.

Sometime thereafter, the popular so long became "Best regards." I reserved that sign-off for more personal E-mail — people with whom I had some kind of working relationship and sincerely meant, well, best regards. That the Internet equivalent of direct mailers used it in a feeble attempt to achieve an up-close-and-personal dynamic seemed rather pointless (if predictable). It wasn't, though, such a turn of phrase that improper use of it turned my stomach.

"Warm (or Warmest) regards" is a different story.

Sure, it's just one word different. But it ratchets up the expression one very important notch on the intimacy scale. It crosses the business/personal line. Warm is evocative of a human touch, of a friend squeezing your arm after you've had lunch and are saying your farewells in the parking lot. Warm is how the armchair feels when you sit down where the cat has been sleeping. Warm is that feeling inside when you've connected with someone, intellectually or emotionally.

E-mail from strangers is none of those things.

E-mail does, of course, have business value, and with the benefits of communicating with distant peers must come some bad. Anyone who has attended a technology conference or registered on a Web site is deluged with the cyber-equivalent of junk mail. That seems at this point to be inevitable, and (despite the hours it costs me) I accept that. Progress usually has some opportunity cost.

What I can't accept is watching those devious marketers commoditize what little linguistic humanity we have managed to bring to this New Age medium. If we allow meaning to seep from our expressions, sentiments that once had the power to move us become just words.

IMPERSONAL

And before long, it's all one contiguous mass of gibberish to shovel through and fork over to the next guy, and we're too numb from the volume and sameness to remember there might be a person (rather than a list server) at the other end of the Reply button.

And when there is a person, we have no way to acknowledge it, to make our message stand out — a raft of emoticons, capital letters and exclamation points aside.

"Warm regards" might not be quite lost to the officious E-mailers among us yet. Let's do our part to make sure it isn't. Use of E-mail might continue to evolve, but some things are sacred. Language is one of them. □

McCrory is a managing editor in the Computerworld Magazines Group. She can be reached at anne_mccrory@cw.com and responds to all messages with appropriate sign-offs.

The 'little' events that will affect you

John Gantz

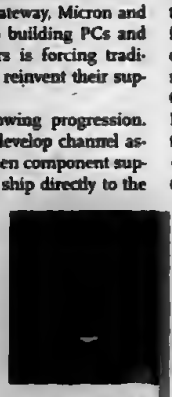
You know the saying. A butterfly flaps its wings in China, setting off a chain of events that results in a tornado in New York. Or something like that. Think of El Nino, where a minor change in airflow over the Pacific causes fires in Malaysia, snow in Atlanta and a new zit on my teen-age son's chin.

So as the year winds down, what were those little events that will have great fallout later? What little things will shape the industry in years to come, like the advent of computer hobby stores in the 1970s, IBM outsourcing the PC operating system or Tim Berners-Lee inventing the Web?

My choices include the following:

- Microsoft's announcement of Active Directory, which in years to come will do for some what SNA did in the 1970s and '80s for IBM users. If you firmly believe in Microsoft's Windows NT vision, the Active Directory may be the only way to synchronize between Exchange and NT users. But if you dream of a true global directory, forget it. We will have competing E-mail directories in large organizations for decades. That will be good for vendors, not for users.
- Intel's announcement that it will develop a chip to run Windows CE smart handheld devices. That means that those things will proliferate dramatically. Soon, most IS organizations will face the same problems Captain Kirk faced when those excruciatingly cute tribbles overran the *Starship Enterprise*. You think managing a fleet of mobile computers is tough, wait until you have more devices outside the company than inside.
- The Resource Reservation Protocol was developed. It will enable Internet service providers to offer access differentiated by service level. Although bandwidth will remain a commodity for a long time, highly reliable and guaranteed bandwidth won't. Once we're hooked on our extranets and intranets, the carriers will be in a position to put the squeeze on us for uptime and reliability. Better expect it.
- Dell hit $3 million per day of configure-your-own PC sales on its Web site. All the effort Dell, Gateway, Micron and others have put into building PCs and tracking those orders is forcing traditional PC vendors to reinvent their supply chains.

Consider the following progression. Traditional vendors develop channel assembly programs. Then component suppliers, such as Intel, ship directly to the channel. New brands pop up. Large companies start building their own brands (the GM PC, the Prudential PC). Within a few years, you may be snapping together your own PCs or renting out the facilities of a channel assembler.



McNealy's Java-enabled key ring is a joke now. In 10 years, it won't be.

- Microsoft and Novell began certification programs for high schools. Businesses face a major IT skills shortage going forward, and developing computer technology as mainstream high school fare is appropriate. But the average age of the IT professional may drop over the next few years, and IS managers and CIOs will have all the challenges of an NBA coach as they try to keep their teams motivated.
- The next Internet protocol, IP Version 6, pretty much finalized this year, will allow for the direct addressing of just about every appliance on earth. Together with wireless and other communications technologies, it almost ensures that 10 years from now we will be running networks that have a lot more than PCs or terminals on them. Scott McNealy's Java-enabled ring that opens a door lock attached to the Web is a joke today. In 10 years, it won't be. □

Gantz is senior vice president at International Data Corp. in Framingham, Mass. His Internet address is jgantz@idcresearch.com.

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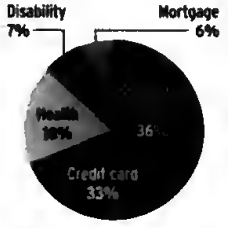
PREVENTING FRAUD

Breakdown by industry of U.S. technology spending on consumer fraud prevention:



Total: $493 million

Source: Meridian Research, Inc., Needham, Mass.

Trek design system cranks out changes

By Randy Weston
WATERLOO, WIS

IMAGINE HAVING to redesign your entire product line every year. Now imagine you have 600 products and each is a precision-engineered, handmade bicycle.

Welcome to the world of Trek Bicycle Corp. The Waterloo, Wis.-based maker of Trek, Gary Klein, Gary Fisher, Bontrager and LeMond bicycles faces this product management problem every year.

PRODUCT DATA MANAGEMENT

Trek, a privately held company founded in 1976, is turning to a new product data management system to handle 120 road and mountain bike models that each come in five sizes.

"We have to run so many things parallel to our production cycle that we can't make a prototype until sometimes hours before running down the production line," said Brad Wagner, production engineering manager at Trek. "A lot of what they are doing in the engineering department is risk management."

The biggest risk of such a business process, Wagner said, is not having current inventory for a part. That means the part being used doesn't function with the bike being designed.

That in turn forces Trek to carry the rest of the inventory for making that bike until the needed part arrives. The missing part will need to be shipped by costly airfreight. And the 100 workers waiting on the line to make that model of bicycle go home because they don't have anything to build that day.

But the risk is being reduced, and the job is becoming much

Trek, page 38

Brad Wagner says Trek used to use paper to track dozens of changes and thousands of parts for 600 new models a year

Streamlining sales at the Ritz

▸ *Hotel buys new system after its own flags; relies on WAN service*

By Kim Girard

ALTHOUGH USING the World Wide Web to make hotel reservations is gaining momentum across the country, Ritz-Carlton Hotel Co. isn't ready to sacrifice the human touch.

The Atlanta-based company, a privately held chain of 33 hotels, is working to improve the work methods of its sales force, while retaining direct customer contact. Its challenge is to integrate an MS-DOS system used to track hotel catering businesses with new Windows 95 applications for booking conferences and rooms.

"You've got two different worlds you're living in," said Thomas Primozic, vice president of operations for Integrated Software Strategies, Inc., a San Ramone, Calif.-based company that manages Ritz-Carlton's network.

Starting in February, the company will fire up one central database and a common sales application that can be used by the 700-member Ritz-Carlton sales and service workforce.

The system will help salespeople — who have competed against one another as well as other hotels in a given city for bookings — avoid calling the same corporations to drum up sales, said Lisa Fearon, Ritz-Carlton's manager of sales system development. Eliminating the duplication of effort is ex-

Ritz, page 38

RECRUITING

On Microsoft's turf, hiring for IS can be tough

By Julia King
SEATTLE

IF YOU THINK recruiting information technology employees is tough, try recruiting them in the shadow of Microsoft Corp. — what many candidates regard as the world's high-tech employment mecca.

On Microsoft's home turf, where the Washington state unemployment rate hovers at a low 4.4%, even consultants are hard to come by, recruiters said.

Believes in word-of-mouth advertising to find workers

"A lot of consultants and people in IT generally look at Microsoft as being the carrot on their resume that will allow them to get jobs anywhere else they want once they've completed their contract obligation," said Shirl Hollingsworth, branch manager at Chicago-based Cara Corp.'s office in Bellevue, Wash.

As a result, local consultants flock to the software maker,

Hiring, page 38

Ritz's sales apps

CONTINUED FROM PAGE 37

pected to save time and money.

Typically, group reservations and event bookings can account for 10% to 20% of a hotel's sales, according to analysts.

"Before, multiple hotels were calling the same contact at an organization to bid on the same piece of business," said Fearon, who was the hotel's project manager. "We didn't communicate internally."

To improve that, Ritz-Carlton is tying its users into the wide-area network of its partial owner, Marriott International, Inc. With access to the WAN, users will share account information on both the reservation side and the catering end for the first time.

Armed with occupancy data and a customer's reservation history, salespeople can target top-tier corporations, gauge missed sales opportunities and anticipate what a customer will want before the first call is made.

It has taken the hotel more than four years to move forward with a WAN plan, Fearon said, noting that it was crucial to get both the sales executives and the company's information systems department onboard to move forward.

In 1994, Ritz-Carlton tried building its own sales applications, using Powersoft Corp.'s PowerBuilder. But after about six months, they scuttled the project, finding programming and development across 30-plus hotels unwieldy and too costly.

BUYS RATHER THAN BUILDS

After completing a return-on-investment study that concluded that Ritz-Carlton could meet 80% of its sales goals by buying rather than building applications, the company decided to implement Sales Vision, Inc.'s Sales Object Framework, a PowerBuilder-based sales automation tool.

The company also will use Boise, Idaho-based Extended Systems Corp.'s Advantage database server to integrate the sales application with the hotel chain's back-office legacy applications that track catering data.

Ritz-Carlton is lagging behind rivals in its efforts to tie its systems together and upgrade to Windows 95, said John Chervenak, an analyst at CKC Co.

But the company's decision to buy applications and outsource its network management will likely avoid some of the implementation problems that have plagued other chains, said Chervenak, whose New York-based newsletter follows technology in the hotel industry.

And although using the Web for reservations is part of Ritz-Carlton's long-term plan, speed, security and personal attention to the customer are ongoing concerns. "A dedicated line and a WAN is easier" than relying on the Web, Primozic said. □

RITZ-CARLTON

Headquarters: Atlanta

Founded: 1983, privately held

Hotels: 33

Employees: Nearly 700 worldwide

Sales force goals:

- Eliminate duplication of effort
- Create a central database for shared room/conference reservation information
- Build a data warehouse
- Use the Web to push corporate inquiries to appropriate salespeople

Trek design system

CONTINUED FROM PAGE 37

easier with a new product data management system from MetrixOne, Inc. in Chelmsford, Mass.

Trek uses the product, called the Matrix system, to manage change orders and automate its approvals through electronic mail-based workflow in the system. Trek also is building a parts "vault," a massive object-oriented database of information on all the parts used to make its bikes.

For less than $300,000, the company will get a revved-up product development cycle, so there will be no chance that a part will be incompatible with a design and no risk that a bike can't be built.

WELCOMED CHANGE

With the change order management system running, Trek already is seeing a cut in change order approval times from four days to half a day and less. And that is speeding up product development cycles.

"Before, it was all manual paperwork where someone manually wrote out a change order form, and then we had to walk it around and get it approved," said Jane Erickson, Trek's production controller. "Once we got the information, we then had to manually check how it was going to affect our production run."

Now Erickson receives those changes via E-mail when they are made. And once she signs off on them, they are automatically forwarded to the next level of approval until all parties have signed off on the change.

"This also gives us the ability to do searches on a part or a model that we are building," Erickson said. "We can pull it up and see if anyone made a change and if we are we building something correctly."

The new parts vault will give engineers and product managers even earlier warnings about whether they are designing something correctly or ordering compatible parts.

With the old system, engineers often wouldn't find out a changed part was incompatible until the prototype bicycle was built, sometimes only hours before it was to hit the production line. That could sometimes delay production for weeks if a new part wasn't available and could drive up costs because the replacement part had to be sent by airfreight.

But with the object-oriented vault and a product configurator, new parts will automatically be matched with other compatible parts.

That changes life for Trek product managers who visit parts suppliers such as Shimano Corp. The product manager can fire up his laptop and access the Matrix system in Waterloo to check whether the Shimano Deore XT SGS rear derailer is going to work with the Sachs Group AG PC-21 chain he ordered last week in Dusseldorf, Germany.

Trek officials hope the product management system eventually will let engineers build a virtual bike before building a prototype.

IMPLEMENTATION

Dick Bourke, an analyst at Industry directions, Inc. in Newburyport, Mass., said those types of product data management projects are becoming critical to manufacturing companies.

But implementing them often takes the same kind of planning and business process re-engineering involved in more massive enterprise resource planning projects, he said.

"It is a cross-functional application," Bourke said. "To be successful it has to weld together several different functions. As a consequence, it is going to need commitment at a high level to break down barriers [between departments] and a dedicated project team." □

Hiring IS tough on Microsoft's turf

CONTINUED FROM PAGE 37

forcing Hollingsworth and many other recruiters to cast their nets elsewhere.

FAMILY VALUES

Another popular strategy of recruiters — especially those in search of more experienced workers — is emphasizing a family-friendly corporate culture and concern for individual workers.

"Microsoft is known as a place to work, work, work. People are at Microsoft at 7, 10, 11 at night. They may be having a ball working on all sorts of fun technology, but they're also not at home with their families," said Ross Porter, a recruiter and technical director at Sitewerks, a company that develops World Wide Web sites.

Porter said he also strongly believes in word-of-mouth advertising, which is why he makes sure everyone he meets — right down to the person delivering office supplies — also is informed about Sitewerks' culture.

"The cost of a 10-minute conversation with an Office Depot delivery person is negligible. But you never know. That delivery guy may have a sister who's a software engineer," Porter said.

Just last week, for example, Porter said he interviewed a software engineer who applied for a position on the recommendation of a graphic artist at a design agency that Sitewerks had partnered with on a project.

"That person is not someone we would have come across by other means," he noted.

LIMITING TURNOVER

Officials at WRQ, Inc., a $130 million PC software maker in Seattle, said they seek to treat every employee as an individual. That means flexible work hours, customized training programs and individually decorated office space.

Employees can also take advantage of the free services of on-site massage therapists or take an afternoon nap in the company's futon room.

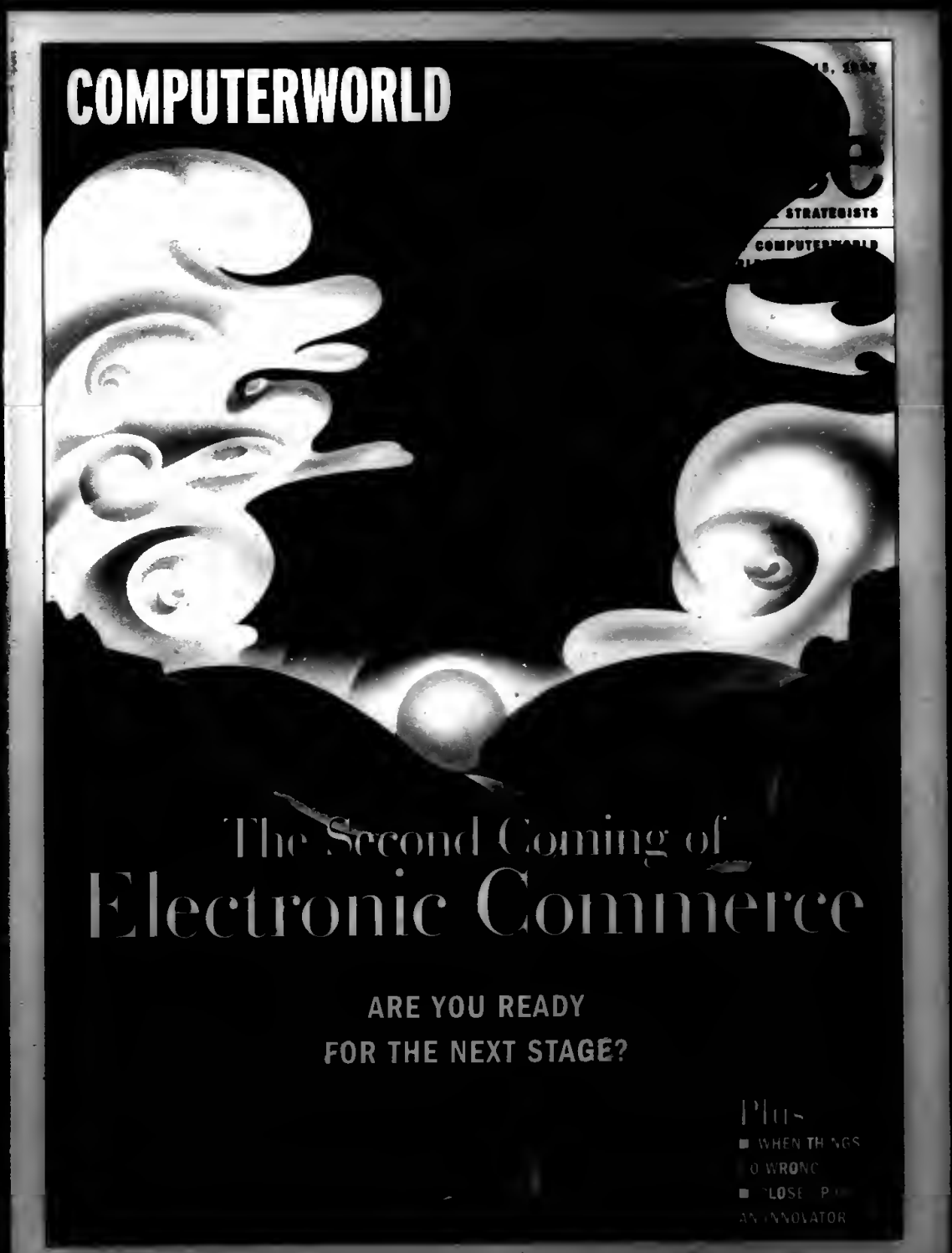
"We go the extra mile to make people feel valued," said Marianne Ransom, manager of employment development.

The result has been an employee turnover rate that averages between 4% and 9%, well below the current industry average of 15% to 20%.

Still other companies, including Neopath, Inc., a Redmond, Wash.-based supplier of computer-enabled medical devices, view Microsoft as a good source of very experienced professionals who may have tired of Microsoft's supercharged, around-the-clock work style.

"We tend to take a more balanced approach to work, and that's one of the things that former Microsoft employees who now work here have commented on," said recruiter Pat Rey.

"We're a health-oriented company, so we can't have people in a constant state of adrenaline drive," she said. "We work hard, but we take time to smell the roses, too." □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EDITOR'S NOTE

Take Two

As we approach the end of 1997, it appears that electronic commerce systems have reached a new plateau. Who, for instance, isn't redesigning at least a portion of his Web site or strategy?

Looking around, you notice many companies either tossing out or adapting their first-phase Web sites. And, in some cases, there is a whole new way of thinking about these chapter two systems.

The first thing you might notice is their ambitious scope. Genstar Container in San Francisco, for instance, undertook a $1.5 million project that entailed building a mission-critical extranet that mimicked the full life cycle of the business (see story, page 10).

Of course, not every company will have the stomach to "go all the way." Part and parcel of second-generation systems is a rational approach that considers the resources at hand but designs with growth and change in mind.

Second, the leading implementers are beyond thinking in terms of stovepipe systems. As one user put it, "We're circling the wagons" and planning a corporatewide system that doesn't isolate departments such as purchasing, sales, marketing and logistics. In other words, fewer companies next year will be taking orders with a front-end Web system without integrating that with an order-taking application at the back end.

Bruce Guptill at Gartner Group goes so far as to say that companies without an enterprise commerce strategy together by the end of 1998 will be the least competitive companies in their markets through the next five years.

And here's a sure sign that companies are treating electronic commerce systems not as a sidelight but as a mainstream piece of business technology: Contingency plans are starting to crop up. Not only are companies building redundancy into their Web sites, but disaster recovery services are also being offered by traditional suppliers such as Comdisco and Sungard (see story, page 18).

In just a short period of time, electronic commerce is likely to become so bound in with the way a company does business that some pundits suggest the very term "electronic commerce" will become meaningless. Rather than being a subject for individual study, it will simply become "the way companies do business."

> Electronic commerce is likely to become so **BOUND** in with the way a **COMPANY** does business that the term may become **MEANINGLESS**.

Mary Brandel

MARY BRANDEL
mary_brandel@cw.com

COVER ART BY DAN PICASSO

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TRENDS, IDEAS AND ISSUES IN ELECTRONIC COMMERCE

Electronic payments is the biggest rev enue driver this year among five sectors of EC. But content will see the greatest CAGR
(Firewalls, encryption tool kits, payment security software, ID tokens, intrusion detection software)
(Payment processing, electronic bill payments, digital currency)
(Internet banking, online trading and financial management software)
(Electronic catalog software, EDI software/services)
(Books, CDs, wine, industrial supplies, plastic resin)
revenue
CAGR 96-2001
Source: Piper Jaffray Inc.
* Projected

Opt-in E-mail: Spam's Respectable Cousin

By John R. Howe

Think "E-mail marketing," and you probably think "spam." But a number of companies are using "opt-in" electronic mail to earn incremental revenue and keep customers coming back. Customers ask for it so they can hear about products and services they're interested in.

By most accounts, "opt-in E-mail was pioneered by American Airlines' Net SAAver service, which E-mails subscribers weekly about discounted fares available on short notice. Since last May, Net SAAver has gone from 20,000 to more than 1 million subscribers and brings in about six figures a month from tickets the airline would not otherwise have sold. Spokesman Tim Smith said it's the combination of low operating cost and hefty incremental revenue that has made the program successful.

OPT-IN E-mail's low **OPERATING** cost and fast **TURNAROUND** make it a **USEFUL** tool.

The mailings are produced with a proprietary program American created in-house last year when it couldn't find a commercial product able to process Net SAAver's heavy load. Addresses are stored in an Oracle Corp. Oracle7 database. The messages are created on a Silicon Graphics, Inc. Origin 200, and the job takes six hours a week to run.

Online industry analysts agree that while opt-in E-mail is a relatively small corner of the electronic commerce market, its low operating costs, compared with print direct mail, can make it a valuable marketing tool.

"If you can target messages effectively and have a strategy to use them, obviously the return on those [E-mail] programs are astronomical because your base is zero," said Scott Nelson, an analyst at Gartner Group, Inc. in Stamford, Conn.

Bill Bass, an analyst at Forrester Research, Inc., agreed, pointing to several airlines' use of opt-in E-mail as a natural fit. "Airlines have real problems with inventory control," he said. "The expiration date on their product is absolute and short term. On products like that, [opt-in E-mail] is great. And it's also a great deal for the consumer — it's win-win both ways."

For customer retention, Bass added, opt-in E-mail is "one of the greatest things since sliced bread. You can communicate with your customer base extraordinarily cheaply, and it's one-to-one marketing that the customer asked for, so it's nonintrusive."

REI'S MATT HYDE: TOTAL SALES FROM THE WEB SITE HAVE TOPPED SALES FROM SOME OF ITS SMALLER OUTLETS

PHOTOGRAPH BY DAVIS FREEMAN

THE Exchange

Opt-in E-mail: Spam's Respectable Cousin

By John R. Howe

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The mailings are produced with a proprietary program American created in-house last year when it couldn't find a commercial product able to process Net SAAver's heavy load. Addresses are stored in an Oracle Corp. Oracle7 database. The messages are created on a Silicon Graphics, Inc. Origin 200, and the job takes six hours a week to run.

Online industry analysts agree that while opt-in E-mail is a relatively small corner of the electronic commerce market, its low operating costs, compared with print direct mail, can make it a valuable marketing tool.

"If you can target messages effectively and have a strategy to use them, obviously the return on those [E-mail] programs are astronomical because your base is zero," said Scott Nelson, an analyst at Gartner Group, Inc. in Stamford, Conn.

Bill Bass, an analyst at Forrester Research, Inc., agreed, pointing to several airlines' use of opt-in E-mail as a natural fit. "Airlines have real problems with inventory control," he said. "The expiration date on their product is absolute and short term. On products like that, [opt-in E-mail] is great. And it's also a great deal for the consumer — it's win-win both ways."

For customer retention, Bass added, opt-in E-mail is "one of the greatest things since sliced bread. You can communicate with your customer base extraordinarily cheaply, and it's one-to-one marketing that the customer asked for, so it's nonintrusive."

REI'S MATT HYDE: TOTAL SALES FROM THE WEB SITE HAVE TOPPED SALES FROM SOME OF ITS SMALLER OUTLETS

PHOTOGRAPH BY DAVIS FREEMAN

REI, a Seattle-based outdoor equipment firm with about $500 million in sales last year, sends its Gearmail subscribers regular E-mails on products, upcoming sales and other events. REI online store manager Matt Hyde said sales from REI's Web site have topped sales from some of its smaller retail outlets.

Gearmail runs off a Microsoft Corp. Access database and an IBM RS/6000 server. REI plans to boost productivity by integrating the database with an enterprisewide, proprietary customer data system that will be networked with REI's stores, mail-order service and Web site, Hyde said.

Nelson confirmed that opt-in E-mail is most productive when it is fully connected to a company's back-end system. "The optimal [scenario] would be to have it tied to your inventory and manufacturing system such that you had triggers that said, 'When these events occur, we want to notify our customers.' "

WHOSE CALL IS IT?

The big question is who decides what should trigger a mailing: the business or the consumer. "With event-driven computing, either the person sending the information can set up the rules about the event or the end user can," said Maureen Fleming, a Gartner analyst. "In my mind it's always, 'Let the end user win' because then you have a more qualified lead."

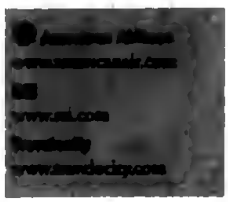
All of which is easier said than done. Case in point: Travelocity, a Web site owned and operated by The Sabre Group, notifies FareWatcher subscribers whenever a fare they're interested in drops more than $25. But subscribers also receive targeted promotions they didn't ask for. Sabre Chief Information Officer Terry Jones maintained that those mailings are "relatively low intrusion" because FareWatcher subscribers volunteer their E-mail addresses when they sign up. "We can send literally hundreds of thousands of E-mails and get maybe 10 people who say, 'Please don't do that again,' " he said.

Forrester's Bass doesn't buy Jones's justification. "If I opt in and all of a sudden you start sending me a whole bunch of advertising things, that's spam," he said.

Gartner's Nelson agreed that low negative response is no guarantee a mailing has been successful. "Sending customers information they're not really interested in only makes them less sensitive to future offers," he said.

But Nelson is more sanguine than Bass about how far businesses can push the "opt-in" envelope, suggesting it can be stretched to include the use of information customers provide over time. "There's a lot of times you can use the information, but you have to soft-pedal that you know as much as you do about your customers or they start to become very nervous," he said.

Howe is principal writer at Clearwater Communications, a writing and editorial services firm in Cambridge, Mass.



CommercePULSE

Hitting the Bull's-Eye

CHANCES ARE you've never heard of Pall Corp. It specializes in industrial filtration and separation systems. But recently, Pall had its own filtration problem: How could it sift through the floods of people in cyberspace and grab the attention of those most likely to need its products? In the end, Pall chose a filter that was so serious as to be comical — a rather dorky-looking fellow named Dilbert. You know, the cartoon character.

Working with an online marketing agency, Hensley Segal Rentschler, Inc., Pall bought banner ad slots on the pages of DilbertZone, the cartoon's Web home (www.unitedmedia.com/comics/dilbert). Dilbert "draws a very corporate audience," said Michael W. Hensley, eCommerce director. "A lot of people check into Dilbert from their offices to get a daily Dilbert fix."

Pall also arranged through the DoubleClick network, Dilbert's Web ad rep, to display its ads only to visitors in process-oriented industries — a simple matter of looking for traffic arriving from proxy servers located at, say, Kodak, Merck and Intel. The result: Pall's gaining some 25 new qualified sales leads per day.

— JOHN VERITY

Just Send the Box

MAYBE OTHER Web software sellers are high on downloading software to purchasers, but not Darryl Peck, president of Cyberian Outpost (www.outpost.com), a fast-growing, Web-based seller of computer hardware and software. In fact, unlike competitors Internet Shopping Network and MicroWarehouse, his site doesn't have electronic software distribution (ESD) capabilities.

Peck doesn't see ESD ever appealing to more than 10% to 15% of the consumer market — his target audience. Plus, he said, the basic ESD infrastructure is still in flux.

Meanwhile, Cyberian takes its international business very seriously. Its home page is available in 11 languages.

But Peck plans to go beyond mere language translation. During the next six to nine months, he hopes to create the ability to sense which country a buyer is from and send him to a localized version of the site.

Cyberian's sales are expected to reach $30 million this year. Peck said he expects to be profitable next September.

— MARY BRANDEL

ILLUSTRATIONS BY CHRIS BALDWIN

NO SMOKE, NO MIRRORS

Electronics distributor uses a single-database approach to its real-time order-processing system

BY JOHN VERITY

Remember the guy who liked his Norelco electric shaver so much he bought the company? Well, Beamscope Canada, Inc., a distributor of consumer electronics gear, believed so strongly in the potential of its new electronic commerce setup that it put $1 million (Canadian) on the line to fund the company that developed it. It looks like the risk is paying off as Beamscope begins reaping the benefits of its Web-based order-processing system and redefines itself as a high-tech distributor.

Richmond Hill, Ontario-based Beamscope distributes stereos, computer gear, software and other items to mass retailers such as Wal-Mart Stores, Inc. and Sears, Roebuck and Co. and to almost 6,000 independent camera shops and small retailers.

But no matter what their size, all of these outlets began pushing Beamscope a few years ago for more accurate order-taking, faster deliveries and fewer products out of stock. The largest customers were submitting orders via traditional electronic data interchange (EDI) while the vast majority used the telephone and fax.

Meanwhile, Beamscope was preparing to take its stock public: "We wanted to separate ourselves from the competition," recalled James Jameson, chief operating officer. "We decided to becotoe a high-tech distributor and solidify our position as the experts in distribution."

Like most distributors, Beamscope's gross profit margins were razor-thin — less than 10% — and its options were limited. "In distribution, I can't raise prices," Jameson said. "I only get to lower my cost per transaction. It's a matter of nickels and dimes."

So the company launched an overhaul of its logistics process, engaging a small team of outside software developers who developed a PC application that enabled retailers to connect over a Datapac line (a data-only service in Canada) into Beamscope's central IBM AS/400. This relatively simple terminal emulation setup enabled retailers to scan Beamscope's live inventory files and place orders electronically.

It worked fine, too, helping wean thousands of retailers from faxing and phoning. "Customers were much happier being able to work with fresher data," Jameson recalled. Indeed, after going public in 1994, Beamscope went on to triple its revenue, from $93 million to a projected $300 million-plus this year. Gross margins, meanwhile, have remained relatively flat and are now in the 9.6% range — several points ahead of competing distributors.

But as helpful as the new setup was, serious shortcomings remained, he said: Even with the 56K bit/sec. Datapac lines, it took many seconds for screens to display new data. Graphics were minimal. And each update of the client-side software meant producing and mailing boxloads of floppy disks — a major distribution problem.

But then the software team let Jameson and other Beamscope executives in on its plan to move the remote access setup to the Web. Persuaded of the Web's great poten-

PHOTOGRAPH BY ALAN MABSH/KLIX

tial, Beamscope turned venture capitalist and took a controlling stake in the software team's new company, Ironside Technologies, Inc., also in Richmond Hill.

This summer, Beamscope began taking orders over the Web using Ironside's Ironworks software. Now a retailer boots up a browser program and connects to Beamscope's Web server, which is an Intel Corp. Pentium-based PC running Windows NT. That machine immediately sends them a Java applet that, as Jameson put it, "explodes" its full-color graphics on the retailer's screen.

How the System Differs

The key to the system is the direct connection between the Web server and the AS/400 database. The Java-based server code uses standard remote procedure calls rather than terminal emulation to reach into the AS/400 programs. This helps maximize access speed and gives the server a broader menu of data and services. The direct connection also enables retailers to quickly access the freshest possible pricing, product and inventory data, as well as their own specific pricing and other contractual data.

In contrast to other electronic commerce setups, this also means there's no mirror, or duplicate, database to update periodically or refresh with data about new products, prices or clients. Nor does Beamscope have to duplicate or tinker with the business logic coded in its AS/400 applications.

This kind of ordering directly from a company's main computer is "growing in popularity," said Carl Lehmann, program director at Meta Group, Inc. in Westport, Conn. In the past year or so, Web technology has improved enough to make this kind of single-database setup practical.

Real-time access to inventory data is especially helpful in the hit-driven software market: In late September, as Canadian hockey fans eagerly awaited the release of a computer game called NHL '98, Beamscope updated its Web site every 15 minutes with news about the software.

In a more typical session, a retailer might look at Beamscope's inventory to see what's available, scan current promotional offers, browse pages describing manufacturers' latest products and place an order and receive immediate confirmation. As of this past fall, retailers can track their shipments at the Beamscope Web site, too, thanks to a live data feed from United Parcel Service, Inc.

The server handles up to 200 sessions at once. Response times are usually less than a second, Jameson said. And retailers can view color photos and video clips of most of the 6,500 products the distributor stocks.

Beamscope has not yet delved into electronic payments. But financial details on each retailer are stored in the AS/400. These programs track outstanding invoices and credit status so that when the customer places an order, the system does a local lookup. If he's about to exceed his credit limit, he's given notice. If all's OK, the system accepts the order and sends him an invoice via postal service or fax.

In terms of security, Beamscope depends on Secure Sockets Layer and selected encryption. The Ironside system allows a few encryption options: It can be applied to just IDs and passwords; to certain sensitive fields of data; or to the entire message sent back and forth across the Internet.

The system makes life easier for Andy Levi, president of Educational Technologies, Inc., which runs a Toronto-area chain of eight specialty-game stores called Mastermind. "I know my order is in [Beamscope's] computer," he said. "There's no rekeying of purchase orders or mistakes. With a fax, I wonder, 'Did they get it?' I wish other suppliers [used the Web], too."

Levi voiced one complaint: The Web pages do not display as many products as he can see on a single paper catalog page. At the same time, the limited breadth is balanced by increased depth of information.

Beamscope has just started taking orders over the Web, so bottom-line improvements are difficult to estimate. But Jameson estimated that costs fell from just over $5 to process a phone and fax order to about 50 cents online. The system cost about $250,000 to build, plus the $1 million investment in Ironside.

But the benefits go beyond cost savings. Nine regional sales agents can use the Web link while visiting retailers, using laptop computers to dial into the Internet. Jameson has hired a sales manager just to oversee that way of using the Web setup because "it's clearly a sales tool. It's just like having 15 telemarketing sales reps in-house."

So far, Beamscope has limited use of the new system to about 600 of its 6,000 small retailers. More will be invited to use it once the home office has finished shaking down a new high-capacity T1 link expected to be completed in October, Jameson said.

Next up will be Beamscope's large, EDI-oriented customers. Their information systems departments and upper managers, who've overseen major investments in EDI technology over the years, are mounting some resistance. But the advantages for a Wal-Mart or Kmart Corp., Jameson said, are hard to resist: increased flexibility and reduced paperwork. Sales agents could sign on to Beamscope's Web site in the morning, say, and throughout the day build a single large order piece by piece. At the end of the day, a supervisor could review the order as a whole. But all along, the proper number of items will have been reserved and will be on hand for next-day delivery.

But with EDI, each segment of that order would get processed separately, using its own purchase order and waiting for the same supervisory review, and there'd be no way to reserve inventory. "Once they see it," Jameson said, "the large retail chains are all pushing to use our Web site." And once they use the site, he hopes they'll be pushing to order more products, too.

Verity is a freelance writer in Brooklyn, N.Y.

WHILE MOST OF US ARE STILL IN THE WOODS, OTHERS ARE AT LEAST GLIMPSING A SECOND GENERATION OF ELECTRONIC COMMERCE

By Natalie Engler

Like most first cracks at electronic commerce, Egghead Computer, Inc.'s fell somewhat flat.

"Frustrating" was the word at least one customer used to describe the World Wide Web-based ordering and software downloading service Egghead introduced a year ago. Even the Spokane, Wash.-based reseller's vice president of information systems, Tom Collins, acknowledged that, early on, the site offered little content, provided insufficient customer service and was "very difficult to get around."

So the company spent this summer remodeling the flat-file HTML site and added a database-driven back end that runs on Silicon Graphics, Inc. WebForce servers and pulls data from legacy Hewlett-Packard Co. and IBM AS/400 systems. Today, navigating the Web site is faster and easier, and customers know immediately whether a product is available.

The once-disappointed customer called the new site a "joy to visit." While Egghead declined to discuss the cost of the overhaul, Collins expects it to pay for itself in less than six months by generating new business.

Sound familiar? When Internet-based electronic commerce first appeared on the scene, it promised the world: a competitive edge, new ways of doing business and generous profits. So firms rushed to build systems. And in their haste, many shoveled information onto the Web, built online catalogs and malls that confounded customers and made pledges they didn't have the resources to keep. The effect, said Heather Stark, principal consultant at consulting firm Ovum, Inc., is what you'll find today: "a poor imitation of the physical world."

But now it's been a couple of years, and some signs of maturity are appearing. While the vast majority of electronic commerce applications still consist of flat HTML files cobbled together with database access and CGI scripting, said Chris Stevens, electronic commerce analyst at the Aberdeen Group in Boston, a handful of organizations are scrapping (or at least revisiting) their original electronic commerce strategies and are building business-critical systems that open the enterprise to partners, suppliers and customers, 24 hours a day, 7 days a week.

You don't need to lift the hood to recognize one of these new applications. What makes them stand above the crowd is their attitude. A far cry from the confused, fragmented efforts that characterize most early offerings, second-generation applications boldly extend the way a company does business. They are well supported, both politically and technologically. They reflect a knowledge of users' needs and expectations. And they are creative, engaging and easy to use. This, said Ellen Schreiber, director of marketing for electronic commerce at Cambridge Technology Partners, Inc. in Cambridge, Mass., "is where you are going to start to see the bang for the buck."

Is It Worth It?

How many times have you heard the words "electronic commerce" this week? Already the phrase has all but lost its meaning. "It's turning into buzzword marketing," Stevens said. "Everything is moving to networking, so everything is electronic commerce."

But if the moniker is ubiquitous, examples of companies' successful electronic commerce applications are about as common as a Hollywood movie that ends on a downer. Second-generation electronic commerce systems account for less than 5% of the marketplace today, said Stan Lepeak, an analyst at Meta Group, Inc. "In reality," added Bruce Guptill, an analyst at Gartner Group, Inc.,

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SOURCES: WALID MOUGAYAR, GARTNER GROUP, INC.; FORRESTER RESEARCH, INC.; META GROUP, INC.

ILLUSTRATIONS BY DAN PICASSO

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Continued from page 11

"there are a few select, significant successes with thousands of other firms just beginning to figure out how to do this."

That's partly because of these applications' complexity. Data compatibility, transaction processing, systems integration and scalability issues rival those of large-scale data warehousing. The ongoing maintenance can be staggering. Meanwhile, these highly visible applications expose the enterprise to everything from security problems to embarrassment.

Those issues weigh heavily on Scott Hunt, MIS manager at C&K Components, Inc., a 40-year-old, privately held mechanical switch maker in Watertown, Mass. Hunt is building a Web-based interactive catalog in an effort to attract new customers, decrease print costs and leapfrog competitors.

C&K hopes to distinguish itself with a catalog that reflects individual customer relationships and includes an online "Build-A-Switch" program that lets customers configure toillions of different switches and receive technical information and pricing in minutes.

C&K is building the system with LiveCommerce Catalog and OM-Transact from Open Market, Inc. Despite the powerful software, Hunt said, "It's a big project." Already, the company has invested almost $50,000 and 50 to 70 work hours a week for five to six weeks to get fewer than six products online. And it's just in the pilot stage. Its price could reach $150,000 and involve people from not only MIS but also engineering, advertising, marketing and operations. As a result, C&K is proceeding with caution, Hunt said. "We haven't jumped in full-steam."

Electronic Commerce Gets Serious

But it takes a full-steam approach to embark on a project that may well be the most expensive and complicated your company has ever tried. Just look at Genstar Container, a San Francisco-based subsidiary of GE Capital Service Co.

Genstar needed to provide superior service in what had become a commodity business. Recognizing that the answer lay in electronic commerce, the chief executive officer hired Jonathan Fornaci as chief information officer, vice president and chief technology officer and gave him the resources to undertake a $1.5 million project that entailed building a mission-critical extranet that mimicked the life cycle of the business.

The resulting applications allow customers to do everything from viewing container specifications, maintenance and repair information to ordering containers to downloading billing information in customized formats. Customers can also exchange containers directly rather than having to first return them to Genstar. That feature alone, Fornaci said, saves everyone money.

Most recently, the team created an online inventory and booking system with the help of Cambridge Technology Partners. The Java-based, three-tier client/server system lets customers book equipment in less than three minutes — up to five times faster than booking the containers by telephone.

Here's how it works: If a customer clicks on the icon for that application, the 1M-byte Java program is downloaded to his browser. That can take from two to seven minutes. At that point, say he wants to know how many 20-ft dry vans there are in Hong Kong. He'll see an entry screen with a pull-down menu, from which he selects Hong Kong. Then he selects "20-ft dry vans" from a list of equipment types and clicks to execute a query. The system creates a script that goes out and executes against an Oracle database, returns the results and populates the screen.

Because of the way the application is written, Fornaci said, the only thing returned is the data, so it's a lot faster than if customers had to use HTML over the 'net.

Genstar was so determined to make this system work that Fornaci was given the resources to create a new 15-person department and compensate those staffers differently from the rest of the company. The team, which is putting in 12-hour days six days a week for the duration of the

PHOTOGRAPH BY JOHN HARDING

project, has received milestone rewards every couple of months.

So far, the approach seems to work, Fornaci said. At press time, the group had completed 10 of 14 applications and hadn't missed a deadline by more than a day.

And the project itself is already affecting the bottom line. The booking application alone, which cost $500,000, was used to book hundreds of containers in its first day of operation. It was used so extensively, in fact, that it paid for itself in a single day.

The payback for the other applications, while less mind-blowing, was still a respectable six months on average. And that doesn't even include the intangibles, such as turnaround times slashed from seven to 10 days down to 10 to 15 minutes. Overall, the project has been so successful that GE has asked Fornaci to create similar services for other divisions of the company.

The Personal Touch

Eastman Kodak Co., too, is hoping to generate additional revenue by letting customers into its legacy systems. This past August, the Rochester, N.Y., company launched an electronic commerce Web application that allows customers to view and E-mail photos and order reprints online. Built with One-to-One, commerce server software from BroadVision, Inc., the system also enables customer service representatives to look at users' profiles and offer help with their account, similar to credit-card or catalog ordering services.

This brings us to another characteristic of second-generation electronic commerce: personalization. Over time, as Kodak offers products and services that cater to specific market segments (new parents, for example), customers will be able to tailor their experience to their lifestyle needs, said Mark Cook, product manager for the Kodak Picture Network.

Kodak used One-to-One for all but 5% of the code. BroadVision also supplied the commerce engine and helped integrate the system with legacy transaction systems, storage systems and a mainframe-based photo finishing application. Strategic Interactive in Boston handled the site design.

Still, Kodak had to assemble a new team comprised of 60 people and spend a year and a half creating the service. And the project was like no other. "This has forced us to alter our processes," including becoming more flexible and taking "different kinds of risks," Cook said. A recent example included changing a hard-to-read font immediately, rather than fitting it in to the normal release schedule. These kinds of things "make people uncomfortable," he said. "But they work out better for the users in the end."

Shopping on the Web

Nowhere is the difference between first- and second-generation electronic commerce more evident than in an online mall. Browsing through a first-generation mall often meant fumbling among often unrelated shops or, as Walid Mougayar, author of "Opening Digital Markets" and president of CyberManagement, Inc. in Toronto, said, searching through "information silos."

Second-generation electronic marketplaces, on the other hand, tightly integrate information about products and services, helping buyers comparison-shop. Milestone Systems, Inc., for example, a venture-backed company in Lexington, Mass., has created a virtual mailroom that allows customers in small to medium-size businesses to compare delivery rates and schedules offered by a host of express delivery companies.

The system uses agent technology from webMethods to repeatedly retrieve tracking data from delivery services' Web sites. Users can submit an airbill number and receive an update as often as they like.

WebMethods' automation tool uses Extensible Markup Language (XML), which allows agents to search multiple Web sites. XML puts more structure and standardization of nomenclature on a

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PHOTOGRAPH BY FORREST MCMULLIN

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given Web site's data than HTML. As such, Mougayar said, it will be the "new glue for electronic commerce across disparate Web sites."

This type of "glue" will prove increasingly desirable as buyers, such as the federal government, look for ways to make better purchasing decisions. With the help of a 3-year-old Reston, Va.-based Web site developer, Electric Press, Inc., the government has introduced a procurement system that helps agencies' purchasing departments quickly find out which vendors will, say, sell an HP printer on a particular government schedule, as well as get the prices, warranty periods and a historical schedule of delivery performance.

The system, called eFed, is being rolled out for NASA and the Army and includes a small number of contracts and 30 vendors. Once that rollout is completed, the government will add an agency a month.

The biggest challenge in building eFed, said Duffy Mazan, president of Electric Press, lies in aggregating data from all the vendors and agency inventory, ordering and pricing systems.

Recently, Electric Press began addressing this problem with middleware, or a "virtual database" that provides a common view into a variety of disparate databases. It is made of mainly off-the-shelf components tied together with custom code. The packaged systems include Microsoft Corp.'s Internet Information Server and Netscape Communications Corp.'s Enterprise Server, Informix Corp. and Oracle database JDBC interfaces and an object-oriented database, Object Store from Object Design, Inc. For credit-card processing, it uses Open Market's SecureLink and Transact, with clearing services from First Union Bank.

Today, people at most agencies have to go to 10 or 15 Web sites to compare products and services, Mazan said. But with eFed, they can go to one place for that information. As for the vendors, he added, eFed offers "a way they can get orders without having to do anything."

MATURITY AT A PRICE

So where does all this leave the mainstream electronic commerce strategist? That depends on your industry.

For those in the brokerage industry, where Charles Schwab and Fidelity are setting a standard, it is dangerous to ignore these electronic commerce advances, said Erica Rugullies, industry analyst at Giga Information Group in Cambridge, Mass. It is dangerous likewise to the automotive industry, as well as in any other industry where products can be delivered digitally.

For small companies, it makes much more sense to outsource these complex and expensive applications, Aberdeen's Stevens said. And for those in many manufacturing industries, a wait-and-see approach may make the most sense. "Eventually, everyone will need electronic catalogs," Rugullies said, "but that is down the road."

Not surprisingly, the bottom line is to consider your business case and whether your company is willing to gather the resources and support needed to go the distance. It isn't wise to rush in. At the same time, it's equally foolish to ignore market advances. We may not be fully into second-generation electronic commerce yet, Gartner's Guptill said, but "this is definitely where business is going."

Engler is a freelance writer in Arlington, Mass.

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Second-Generation Applications

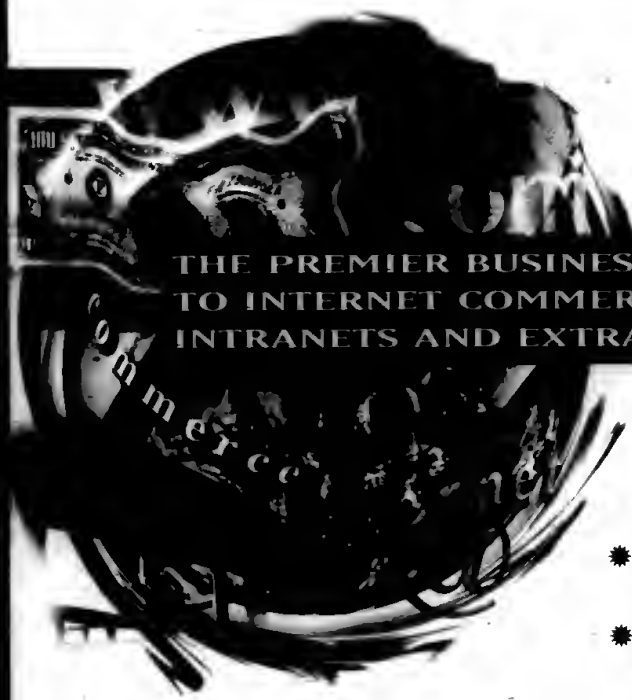
The hallmark of a second-generation EC application, analysts say, is that it does something with networks that can't be done effectively any other way. Here are a few examples:

ELECTRONIC MARKETPLACES such as CUC International's NetMarket (www.netmarket.com), Consumer's Edge (www.consumersedge.com) and OnSale (www.onsale.com) aggregate buyers and sellers for transactions and auctions that would be hard to coordinate in the physical world.

FULL LIFE-CYCLE BUSINESS APPS let customers do everything from identifying products to completing purchase orders to tracking delivery status to receiving invoices and reports, all online. Companies offering these services include Marshall Industries (www.marshall.com), Egghead, Genstar Container (www.genstar.com) and MicroAge, Inc. (www.microage.com).

VALUE-ADDED SERVICES. U Vision's ComputerESP (www.computeresp.com), Milestone Systems, Inc. (www.clickandsave.com) and IPrint (www.iprint.com) have used Internet technologies to create new services on top of existing ones. For instance, IPrint lets customers design stationery, invitations and business cards online and have them printed professionally.

PERSONALIZATION CAPABILITIES can be found at the Web sites of Kodak (www.kodak.com) and Life Technologies, Inc. (www.lifetechnologies.com). Life Technologies is upgrading its service so that when a customer logs in, he receives information in his local language.



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[Most FIRMS haven't even begun WEB disaster planning

When Things Go Wrong...

If you don't think Murphy's Law applies to the Internet ("If anything can go wrong, it will"), you've either been living on Mars or not bothering to read the newspapers lately.

This summer saw the worst of it. In June, Web-related failures shut down stock market trading on the E*Trade Web site for about an hour. A week later, a software glitch in Charles Schwab & Co.'s electronic brokerage service left customers unable to get information about the status of trades or account balances. Then, a combination of computer error and operator carelessness caused Network Solutions, Inc.'s Domain Naming Service (DNS) server to send out corrupted Internet address information.

Because Network Solutions is responsible for managing and assigning Internet addresses worldwide, the mess-up had far-reaching consequences: Some sites remained inaccessible for hours. Worst of all, some Internet service providers (ISP) said at the time, DNS problems of this kind happen regularly, and Network Solutions still has no fail-safe mechanism to stop them.

Such a string of snafus comes as no surprise to Robert Williams, co-founder of The ProShop.com, one of the first Web-only retail sites to go online. "The Web is new; everyone's new" — particularly when it comes to ensuring the 7-by-24 reliability that electronic commerce transactions demand, he explained.

Since ProShop parent company Brainstormers, Inc. first launched the online golf equipment retail site, it has suffered problems with the credit-card transaction server software; with the user access tracking software (see story page 20); and with the Internet service provider itself, which inadvertently took the site off-line during a change of ownership, according to Williams.

ProShop also experienced problems when it first began using Cybercash, Inc.'s secured online credit-card services. "We were having problems with their server software going down, so we had to keep restarting it," Williams said. "They fine-tuned it, changed out a couple of programs, and now it runs flawlessly." A recently released new version of the software fixed some faults for good.

ProShop is definitely in the minority when it comes to developing a cohesive strategy to prevent more from happening, according to Bill Gassman, a senior research analyst at Gartner Group, Inc. "About 20% of companies I'd say are proactive [about Web reliability]; another 30% are talking about it; and the other 50% are trying to figure out what to do about availability issues," Gassman said. Of that 50%, a lot of companies simply assume that "slapping a machine on there and letting it run will work out OK."

That's a mistake, Gassman said, because a downed site or poor response time can mean anything from a marred corporate image to lost business to "a serious and rapid potential loss of the customer base," as when an investment service goes down.

The first thing a company needs to do is analyze the business criticality of its Web site and applications to determine whether a 1% downtime is something it can live with or 7-by-24 uptime is the only way to go, Gassman said.

One Common Key

But whatever level of reliability a business Web site needs, everyone agrees that redundancy is the key to fault tolerance. That means "at least two of everything," said David Linthicum, senior manager at Ernst & Young LLP's Center for Technology Enablement. This includes the ISP connection, connectivity technology such as routers and switches and, of course, the Web site itself, including servers, LANs and storage media.

Actual events keep proving how crucial that backup can be, not only in case of failure but also in the event of an unexpected jump in site hits. FedEx Corp., for example, counts itself lucky that when the UPS strike hit, it was in the process of upgrading its Web site links from T1 lines to a T3 connection, said Susan Goeldner, manager of Internet technology for the package handler.

"During the two weeks of the strike, we saw an 85% increase

STRATEGIES. Those that have say **REDUNDANCY** is the key.]

BY ELISABETH HORWITT

in total number of hits," Goeldner said. FedEx handled the volume by speeding up the switchover to the T3 link. "Initially we changed just FTP over, but we were still maxing out, so we moved everything to the T3 link," with the T1 lines acting as backup.

The Web site provided a crucial means for customers to get updated data on the status of their shipments during the strike because the human call center would have gotten swamped, she said.

Building redundancy into the Web site involves much of the same technology as traditional client/server systems, Linthicum said. "You can set up application rollback, disk mirroring and automatic failover [to a backup system] for the Web servers themselves" using existing operating system tools to ensure synchronization, he said. "The Web won't get in the way."

Even better, vendors are hurrying to Web-enable fault-tolerant products. For example, BEA Systems, Inc. offers Tuxedo Jolt, which is a Web-compliant version of the Tuxedo transaction monitor. Tuxedo monitors server transactions and provides features such as rollback, which allows the system to restart transactions from where they were at the point of failure.

Also, the back ends of many current Web architectures are legacy mainframes and traditional servers that already have fault-tolerant mechanisms in place.

Special Problems

However, certain aspects of Web technology, and the Web environment itself, pose special reliability challenges that never troubled the sleep of client/server system administrators.

One challenge has to do with the inner workings of DNS, the protocol by which logical Internet addresses are mapped to actual physical locations.

The problem is that in a secured Web environment, the Internet address mapping protocol will not assign multiple physical addresses to a single Web domain name, said Gideon Sasson, senior vice president of electronic brokerage technology at Schwab. This provides a challenge to companies such as Schwab that are trying to set up fail-over mechanisms that automatically route client queries to a backup server or connection.

In a nonsecure environment, DNS can route client queries for a logical Web address to multiple sites on a round robin basis. But the round robin utility lacks the intelligence, for example, to route queries around a server that has crashed, said Kevin Delgadillo, product manager for Internet technologies at Cisco Systems, Inc.

Schwab's Web site is currently distributed across multiple servers

Please turn to next page

ILLUSTRATION BY MATSU

Continued from page 19

in different parts of the world. The configuration serves two purposes: fault tolerance and scalability through load balancing, Sasson said. To get around the one-to-one DNS mapping limitation, the San Francisco-based investment firm developed a homegrown utility that "enables customers to click on a link that uses an algorithm to dynamically pick one of many servers," he added. All it takes is one click of the mouse; nevertheless, Schwab still needs to persuade customers to use that URL rather than a bookmark linked to one server, Sasson said.

Schwab is also looking at two Cisco products said to address its DNS addressing needs: Local Director and Distributed Director. Both products are said to send incoming DNS queries to one logical Web address and route them across multiple physical servers on an intelligent basis. For example, a Director server can route queries to the server with the lightest traffic load or reroute queries around a downed server.

Local Director works with multiple local server clusters. Distributed Director, shipping since March, provides intelligent multisite addressing on the actual Internet WAN. IBM's Network Dispatcher is said to provide comparable capabilities.

But one issue for Schwab is that an intermediate server such as Local Director "to itself becomes a single point of failure," Sasson said. There still needs to be that single physical address that Internet DNS directory servers can recognize and map to.

And while one Local Director server can support multiple server clusters, a small firm with a small Web site operation may find it hard to justify the $32,000 price tag. Distributed Director costs $17,000 to $35,000.

Schwab's site has experienced failures: once when BBN, its ISP, had a system crash and again when a glitch developed in its internally developed Web middleware, Sasson said. The company hopes to finish eliminating single points of failure by year's end, when a backup data center in San Francisco gains Web capabilities, he said. Then the San Francisco center and the primary center in Phoenix "will be able to manage the whole data load of our entire business at any given time," and when one goes down, the other can take over, he said.

The Stateless Problem

The Web's stateless nature can also pose reliability challenges — specifically, when it comes to preserving user transactions if and when a site does go down.

ProShop, for example, is looking at two ways to ensure rollback procedures with the customer database, Williams said. One way is to "cookie the shopping cart," he said — i.e., make a record of a customer's transactions and store it as a cookie on the customer's system, with a unique ID. If something interrupts the transaction, the information would be accessible to the Web server the next time the customer logged on.

But a new cookie specification that the Internet Engineering Task Force is now debating threatens to make many Web clients cookie-proof (see related feature story at www.computerworld.com/emmerce). Fortunately, ProShop uses Webspeed Transaction Server, a Web application development environment in which multiple agents handle Web client/server transactions. Besides enabling the site to process multiple transactions simultaneously, the agents can also lock on to a customer's browser and "keep a transaction open for hours, days, months" when the server fails or the connection is disrupted, Williams said.

Another difficulty in controlling reliability on the Web stems from the need to entrust at least some pieces of one's Web architecture to others: ISPs, carriers and the routers of the Internet itself.

There is not a lot users can do, for example, to guard against a DNS server crash that makes some addresses unreachable — except lobby Network Solutions to build more fault tolerance into its systems.

In other areas, however, users have at least

Troubleshooting @ ProShop.com

So you thought pinpointing trouble spots on client/server installations was tough? ProShop.com owner Brainstormers, Inc. learned the hard way that the Web can add a whole extra level of difficulty to the task of troubleshooting.

Three months after the golf equipment retailing site went online, it began going down intermittently on weekends — its busiest time, founder Will Pringle said. "Basically, it meant we were closed for business" because there is no physical store front, mail-order catalog or call-in center to provide a backup channel.

ProShop's techies first checked for disk errors and problems on the Windows NT server. They then upgraded the RAM, but the site still went down.

PROSHOP'S WILL PRINGLE PINPOINTED WHY SITE WAS DOWN ON WEEKENDS

But checking the RAM uncovered the problem: the software that parsed the weekly user access log file over the weekend. The parser ensures that only certain user access log activities get recorded "so we don't end up entering every detail," Pringle said. As the site grew popular and hits became more frequent, the parser demanded more RAM until the server had to discontinue other key processes, then shut down.

"We solved the problem by changing our system to parse the files daily, and we never had the problem again," Pringle said.

— ELISABETH HORWITT

PHOTOGRAPH BY MICHAEL J. PRICE

some recourse. After its first ISP inadvertently took The ProShop.com off-line, for example, Brainstormers took matters into its own hands. First, it moved the site, which the ISP had been maintaining, in-house. "That way, we can control server reliability" by installing redundant servers and hard drives, Williams said.

Secondly, the golf equipment site switched its Internet links to another provider: a large, well-known company. So far, there have been no problems.

Going with a larger provider makes sense, Linthicum said, "because global-class companies like BBN Planet, Worldnet, MCI and UUNet have the money and resources to create huge networks with no single point of failure." And a growing number of major ISPs, including IBM Global Network and Aegis, provide disaster recovery services that include maintaining a backup Web site, monitoring the primary site for failures and rerouting Web queries to the backup site when failure does occur (see story at right).

Not that the big shops are proof against service interruptions, as several recent incidents attest. They are just less vulnerable than the small shops.

To be safe, Ernst & Young has dual connections to two different ISPs, Linthicum said. "ISPs may be down 1% of the time, but that may represent [the loss of] a million dollars for an organization." Indeed, Linthicum cited the real example of an unnamed financial company that lost a million dollars in business when its Web site went down for 24 hours. The cause: a severed telephone line to its ISP.

The bottom line is, "Guaranteed service levels can only be as good as all of the links that make up the connection," Sasson said. "And nobody controls all of those links."

Horwitt is a freelance writer in Woburn, Mass.

When Disaster Strikes

For Reality Online, Inc., the decision to set up a separate disaster recovery backup site was pretty much a no-brainer. A Norristown, Pa.-based subsidiary of Reuters America, Inc., Reality Online provides online brokerage services and information on the Web. When the company conducted an in-house study of the business impact of site downtime, it concluded it could not afford to go off-line for even a day.

"We looked at a number of different ways to do it, including a separate data center, a fully mirrored [or hot] site and building our own," said Jeff Jones, senior vice president of Reuters' Web Development and Operations Group. The final choice was a dedicated facility at Sungard Recovery Services, Inc.'s Philadelphia MegaCenter.

Both backup and primary sites are linked via a T3 line to Reality Online's primary ISP, UUNet. Should the primary site go down, the backup site can take over within an hour, Jones said. Primary site backup tapes are delivered to the Sungard facility every night, so it could be as much as 24 hours out of date when a disaster hits. "This is not currently a problem with us," Jones said.

Sungard created the Web disaster recovery service for Reuters but has since commercialized the offering. Sungard perceives the market as very young but growing rapidly, said Doug Clauson, a spokesman for the disaster recovery unit of SunGard Data Systems. Right now, users and vendors alike are "still figuring out what products and services are needed and what exactly disaster recovery is in the Web environment," he explained.

And a spate of vendors are introducing Web site disaster recovery services. Here are some of the major players:

- **DISASTER RECOVERY** services such as Sungard and rival Comdisco, Inc. Sungard's offering costs in the neighborhood of $2,000 a month, Clauson said.
- **WEB HOSTING** and site management services are offering customers the ability to set up redundant Web sites on geographically distributed facilities, with the ability to automatically reroute traffic to the backup site if the primary one goes down.

GTE Corp. subsidiary BBN Corp. and Exodus Communications, Inc. in Santa Clara, Calif., for example, are both in the process of implementing Cisco's Distributed Director to provide this capability, company spokesmen said (see story page 18).

- **LEADING ISPs** and carriers will monitor customer sites and automatically reroute traffic to a backup site in case of failure.
- **IN MARCH 1996,** IBM Business Recovery Services and Internet service provider Icon CMT Corp. jointly introduced Internet recovery services.

In addition to helping customers design and implement their own Web site disaster recovery, the service will host duplicate sites at its own facilities, according to Mike Salter, project manager at the IBM subsidiary. In addition, IBM Network Services now offers IP address relocation that automatically reroutes IP traffic from a primary Web site to the backup site at an IBM Recovery Services center, Salter said.

The price of such services depends on how quickly a customer needs to have the backup site take over and how fresh the data needs to be, Salter said. If a customer can tolerate, say, a 24-hour recovery range and is willing to share facilities with other customers, a backup facility costs 10% to 15% of the cost of running the whole application, he said.

Indeed, one of the main lures of Web disaster recovery services is that they cost significantly less than a comparable in-house facility. Reality Online believes it realized cost savings of 40% to 45% by going with Sungard's recovery service instead of building its own disaster recovery facility, Jones said.

Off THE Books

COMPILED BY CARLA CATALANO

HOW **MUCH** HAVE **YOU** CHANGED?

We asked EC practitioners what the biggest change to their EC strategy has been in the past year

Frank Trotter

Managing Director, Capital Markets Group
Mercantile Bank (former Mark Twain Bank), *St. Louis*
www.mercantile.com

"FROM A payment standpoint, we have begun to focus on businesses . . . within our ecash project. Ecash has been running for two years, but for the first 18 to 20 months, the focus was on retail. Now the focus is on corporate payments, primarily incorporating our payment system into legacy and new Internet-compatible accounting systems. This way, corporations can make automatic real-time payments using ecash."

Steve Whan

Computer Specialist
B.C. Hydro
British Columbia
www.bchydro.bc.ca

"ONE YEAR ago, we had a static Web site. Now we're getting consumers to visit our Web site by providing more customer-service-oriented functions, such as electronic bills, usage history, environmental information, graphical links and our Power Smart program, which is designed to make consumers more energy conscious. Six months from now, we hope to take electronic payment from our customers."

Mark Hatch

Director of Marketing, Business Development
Avery Dennison Office Products
Diamond Bar, Calif.
www.avery.com

"OUR biggest change is the shift in senior management mentality. Management now understands that our Web site is not the most important part of our strategy but that the linkages to our trade partners and their e-commerce strategies are. These strategies are in the early stages of maturing. We get more requests and demands from our trade partners for linkages, content and integration issues than we did a year ago."

Laura Longcore

Marketing Systems Manager
Boise Cascade Office Products
Itasca, Ill.
www.bcop.com

"OUR biggest change is less billboard advertising and more focus on true commerce. Our primary focus now is extending true electronic transactions to our customers, such as sending electronic catalogs, providing customizable ordering tools and also providing inventory and order-tracking information. Previously, our main commerce provision was our static Web page, which provided our location, phone and address."

PHOTO COLORIZING BY BETSY HAYES

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The Internet

Electronic Commerce ♦ The World Wide Web ♦ Intranets

Briefs

THE GROWING WEB

21% of U.S. households have access to the Web

28% of Internet households have purchased products online

24% of Internet households have been on the Web for six months or less

Base: 2,000 households

Source: Strategic Marketing for Radiology, Inc., Milpitas, Calif.

WALTER P. SAVAGE

Safe snooping

▸ *'net background checks subject to errors, liability*

By Stewart Deck

INFORMATION SYSTEMS managers who are tempted to use the Internet to run background checks on prospective employees are best advised to use it judiciously. Although there is a wealth of information to be had, the accuracy of data is often questionable — and there are legal consequences if the information is misused.

There is no shortage of background-check services on the Internet. One small electronic publishing firm in Florida recently advertised a $22 list of URLs that promised to yield information about a prospect's credit history, criminal background, education and even driving record.

The ease of access to information isn't lost on Jim Miller, manager of IS administrative services at Caterpillar, Inc. in Peoria, Ill. "We'd probably look into using the 'net for background checks if we had some assurance of the information's integrity and we knew who was supplying it," Miller said.

But much of that information, although interesting, may not be pertinent to how well a candidate can do the job. And misuse of personal information — such as a credit history — could lead to civil litigation.

"Anything that isn't germane to making an employment decision — that has

Snoop, page 44

WEB APPLICATION

Development tool targets ease of use

By Sharon Gaudin

SYBASE, INC. is trying to make World Wide Web-based application development easier by combining several tools into one.

The database powerhouse showed off its new PowerSite development tool set and PowerDynamo Web application server at Internet World '97 in New York last week. The tool set was designed to offer developers a simpler choice than the four or five tools many use.

COMING TOGETHER

"[This] brings several development processes together. Developers should really like that," said Heather Ashton, a research analyst at Hurwitz Group, Inc. in Newton, Mass.

PowerSite is a development tool designed to manage and deploy large-scale applications that run on the client or server. It also has a repository, repository management system and security administration.

The tool was designed for development teams with varying

Development, page 44

Custom server caches in on 'net

▸ *Proxy alternative offers plug-in convenience for corporate intranets*

By Patrick Dryden

A NEW OPTION for caching Internet traffic that ships this week may be worth the price to network managers who want more control over delivery of intranet and World Wide Web information.

Network Appliance Corp. in Santa Clara, Calif., has combined cache software optimized to handle the Hypertext Transfer Protocol (HTTP) with a customized server ready to plug in to a network.

IN DEMAND

The result, called the NetCache Appliance, "makes sense in high-demand situations that require a decent server to handle a lot of users," said Brendan Hannigan, an analyst at Forrester Research, Inc. in Cambridge, Mass.

By storing requested data locally, a cache server can return pages quicker than a request that must travel across the Internet. It also can conserve intranet bandwidth by preventing repeat requests for the same page from traversing costly wide-area network links.

The NetCache Appliance promises greater performance and reliability than a server built from a Unix or Windows NT system running general HTTP cache software from Microsoft Corp. or Netscape Communications Corp., according to Hannigan.

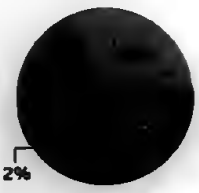
The vendor claims that its alternative can handle up to 8,000 simultaneous connections compared with about 900 to 1,000 for a typical server and 3,600 for the best-performing Unix system. That means more users can get brisk response, possibly saving the cost of upgrading bandwidth or building more cache servers.

Cache, page 44

Snapshot

ALL ABOUT WEBMASTERS

Background of webmasters



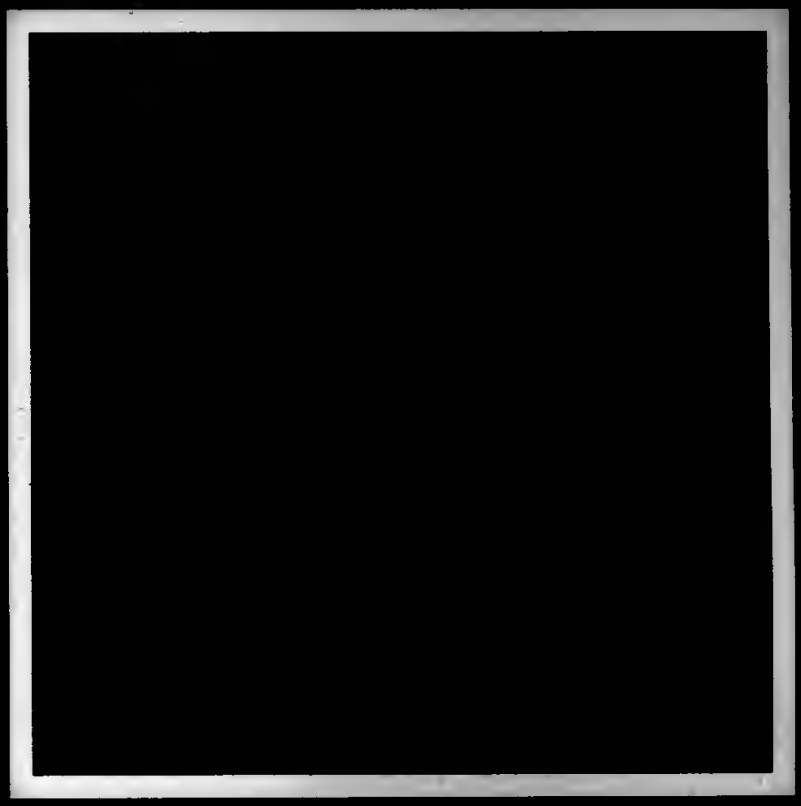
- Technical PC skills
- Systems administrator
- Programming
- Network administrator
- Graphics department
- Other

Where webmasters get their training

- On the job
- Vendor-oriented education
- Books and tutorials
- Online or CD-ROM
- Other

Base: 100 webmasters

Source: Intranet Institute, Bethesda, Md.



PEOPLE
Soft

'net snoop with care

CONTINUED FROM PAGE 41

no bearing on how the candidate will perform — is in the privacy realm," said Peter Polachi, a managing partner at Fenwick Partners, Inc. in Lexington, Mass. Fenwick is an executive search firm that specializes in high-technology placement.

"Things like religious affiliation or ethnic affiliation are certainly private," Polachi said.

"We have concerns about employers [that] collect and use that kind of data," agreed Marc Rotenberg, director of the Electronic Privacy Information Center in Washington. "As a general matter of course, there are very few restrictions on the type of information that employers can collect about potential employees."

And some of that information — even something as personal as a credit report — could be legitimately useful, Polachi said. "I wouldn't have any issue — if we were trying to place a [chief financial officer] candidate — of making sure that an individual ran his personal financial life as well as he would run the company's," he said.

ELECTRONIC PRIVACY

However, employers need to be very careful looking for and making proper use of information, particularly financial reports, said Brooks Kubik, an attorney at Stites & Harbison in Louisville, Ky. Kubik specializes in employment law.

"Any kind of financial or credit information will raise serious issues under the Fair Credit Reporting Act," Kubik said. That law imposes civil liability on both the reporting agency and the user of that information. "If every 'i' wasn't dotted and 't' crossed when it was gathered," Kubik explained, A candidate who is turned down for a job because of a poor credit report pulled off the Internet can file a civil discrimination suit.

To gather such financial details legally, Kubik counsels employers to forget the Internet and hire a credit reporting agency that knows and follows legal guidelines.

A potential employer could also get into hot water using Internet-gathered information related to civil lawsuits. For example, if a candidate is turned down for a job because of a history of filing discrimination lawsuits or worker's compensation claims, the person could file charges of discrimination or retaliation.

So what useful information can employers find using the Internet? In addition to school and residential background, history driving records are easily found. "If I were running a trucking company and needed to employ drivers, it would be easy to use the 'net to see if candidates had valid driver's licenses and clean driving records," Polachi said.

VIOLENCE ALERT

Kubik advises clients to look for any civil or criminal records that allege violence. Courts in many states have determined that companies can be held liable if they failed to check the background of an employee who goes on a crime spree. If such a crime spree does occur after an incomplete background examination, the remuneration to victims averages more than $800,000, according to Pinkerton's, Inc., an investigative service.

Above all, experts advise against using the Internet as a definitive source. If an employer turns up questionable information, it should be corroborated by other sources. "Be careful with the Internet and give an applicant the chance to explain anything adverse that you turn up," Kubik said. □

SYBASE'S WEB TOOLS

PowerSite

- Enterprise-level development tool
- Handles management and deployment of applications
- Has a repository for component management
- Includes security administration

PowerDynamo

- Web application server
- Can build thin database applications
- Multithread architecture
- Works with any ODBC database

Development

CONTINUED FROM PAGE 41

levels of programming skill, Ashton said.

UNIVERSAL APPEAL

"Teams are made up of programmers and marketers and analysts," she added. "PowerSite offers development capabilities to all those different skill levels because they develop with components and templates instead of having to know how to code. And if you can enable a marketing person to go in and update pages and make changes, that's really helpful."

PowerDynamo is a Web application server that has been sold as part of some of Sybase's packages. This is the first time it will be sold alone. PowerDynamo also will support database applications. □

Surfing for ad dollars is publishing challenge

By Marc Ferranti
NEW YORK

INTERNET WORLD '97 kicked off last week with a seminar on Internet advertising — a soul-searching exercise on whether the current business models for publishers and advertisers are working.

None of the big-time Web publishers speaking in panel sessions said they were breaking even yet. But World Wide Web publishers are learning what works and what doesn't in a medium that should work very well, at least in theory, according to Rich LeFurgy, vice president of advertising at ABC News/ESPN Internet Ventures.

"The Internet has the broad demographical reach of television, the depth of print, the focus of direct marketing and the customer service and sales strength of telemarketing," LeFurgy said.

"The main value of the Internet is delivering to the consumer what she wants, when she wants it."
– Kathryn Creech, Hearst New Media

But there are some basic hurdles the Internet as an advertising medium still needs to overcome, LeFurgy said.

First, many potential advertisers still imagine the Internet audience as nerdy, despite demographics that are "a marketing dream," he said. Web surfers are wealthy (65% make more than $50,000 per year) and educated (75% went to college).

Another stumbling block is that many brand-name companies that are normally advertisers and not publishers have built "destination sites" of their own — promoting their brands, taking in advertising dollars and transacting business.

That leaves brand-name companies and new entrants competing on a more level playing field with big traditional publishing companies, said Ramona Ambrozic, vice president of marketing at Wire Networks, Inc. The big drawback is that it may not make much of a difference "if you're not certain that your potential audience can even find you" on the Web, she said.

Attracting advertising dollars means exploiting the unique value of the World Wide Web, said Kathryn Creech, general manager of Hearst New Media and Technology.

"The main value of the Internet is delivering to the consumer what she wants, when she wants it. It's instant gratification," Creech said.

For example, on one Hearst site devoted to home fashion, users can get a three-dimensional, virtual-reality look at the inside of a home, rather than being limited to two-dimensional snapshots that are provided in magazines, she said.

One of publisher Conde Nast's sites also takes advantage of the special capabilities of the Web, said Sarah Chubb, director of CondeNet. For example, one site lets users plug in data about height, weight and daily activities to get a recommended protein intake for the day, she said.

By leveraging the computer's ability to do calculations and the capability to directly respond to a specific consumer's personal data, Web sites will attract the general consumer and also advertising dollars, panelists said.

"It's not rocket science, but can you get this [interactivity] from a magazine or from TV? No, no, no," Creech said. □

Ferranti writes for the IDG News Service in New York.

Cache offers plug-in convenience

CONTINUED FROM PAGE 41

The RoadRunner Internet service from Time Warner Entertainment Co. uses these dedicated devices in six markets, according to Steve Rasmussen, director of new business development at integrator Toshiba America Information Systems, Inc. in Irvine, Calif., which helped set up the devices.

RELIABILITY

The NetCache Appliance is faster and more reliable than a huge server, Rasmussen said. RoadRunner provides LAN-speed access via cable modem from as many as 20,000 simultaneous subscribers, he said.

NetCache Appliance comes in two models with fault-tolerant disk subsystems. A unit with 20G-byte capacity costs about $25,000.

"Information systems managers should consider caches as part of their network infrastructure, but not everyone needs this optimized appliance," Hannigan said.

Mark Juric, for example, runs the NetCache software on a cache server at company headquarters but balks at adopting the new dedicated units for 25 remote offices.

Home-built servers provide adequate performance at a lower cost, according to Juric, team leader for production systems at software developer Platinum Technology, Inc. in Oakbrook Terrace, Ill.

"We can build a cheaper server without the fast storage and the convenience of simpler systems management," Juric said. □

NEW PRODUCTS

APPLE COMPUTER, INC. has announced WebObjects 3.5 software for developing World Wide Web applications.

According to the Cupertino, Calif., company, the new Internet-based development environment has increased Java support and an improved real-time WYSIWYG viewer. Site creators also can use its Direct-to-Web framework of open application programming interfaces for the creation of customized third-party templates. The software supports Sun Microsystems, Inc.'s Java Development Kit 1.1.3 and runs on Windows NT, Unix and Apple's OpenStep.

Developer seats cost $1,500, and pricing for deployment licenses starts at $7,500.

Apple Computer
(408) 996-1010
www.apple.com

NOVASTOR has announced BackupNet, software for Internet-based data backup and retrieval.

According to the Simi Valley, Calif., company, BackupNet can perform incremental online backups that back up only the data that has been changed in any type of file. The client/server software runs on Windows 95 or Windows NT and was designed for small to midsize companies.

A 10-user license costs $495.

NovaStor
(800) 668-2786
www.novastor.com

NETIQ CORP. has announced AppManager Suite 2.0, management software for Windows NT-based systems that now supports Domino servers from Lotus Development Corp.

According to the Santa Clara, Calif., company, Version 2.0 lets Domino administrators determine the amount of electronic mail that different servers are receiving and how fast outgoing messages can be sent. It can monitor replication and disk availability and help users pinpoint where in the Domino database the biggest growth is taking place.

Pricing is based on the number and type of managed systems and applications. Software for managed systems starts at $600. Console pricing starts at $2,500.

NetIQ
(408) 556-0888
www.netiq.com

INSTALLSHIELD SOFTWARE CORP. has announced InstallFromTheWeb 2, Windows 95/Windows NT-based software for application distribution over the Internet.

According to the Schaumburg, Ill., company, the software lets application developers create a World Wide Web page that users access to install software. If a user loses a connection during a download and has to reconnect, the software compares every downloaded file with its original host server copy and downloads only those files not previously loaded. It works with Microsoft Corp.'s Internet Explorer 3.0 or higher and Netscape Communications Corp.'s Navigator 3.0 or higher.

The tool costs $395.

InstallShield
(847) 240-9111
www.installshield.com

MICROSOFT CORP. has announced the immediate availability of FrontPage 98, software for World Wide Web site creation and management.

According to the Redmond, Wash., company, the authoring tool supports Dynamic Hypertext Markup Language and the Channel Definition Format. It includes a set of templates, called Themes, that make it easier to deploy similar backgrounds, banners and buttons across several pages. It supports Cascading Style Sheets and has improved tools for creating forms, tables and frames.

FrontPage 98 costs $149.

Microsoft
(425) 882-8080
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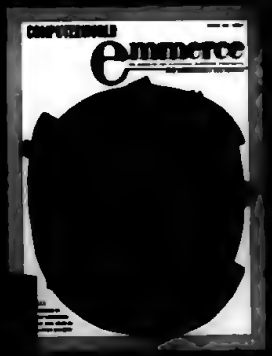

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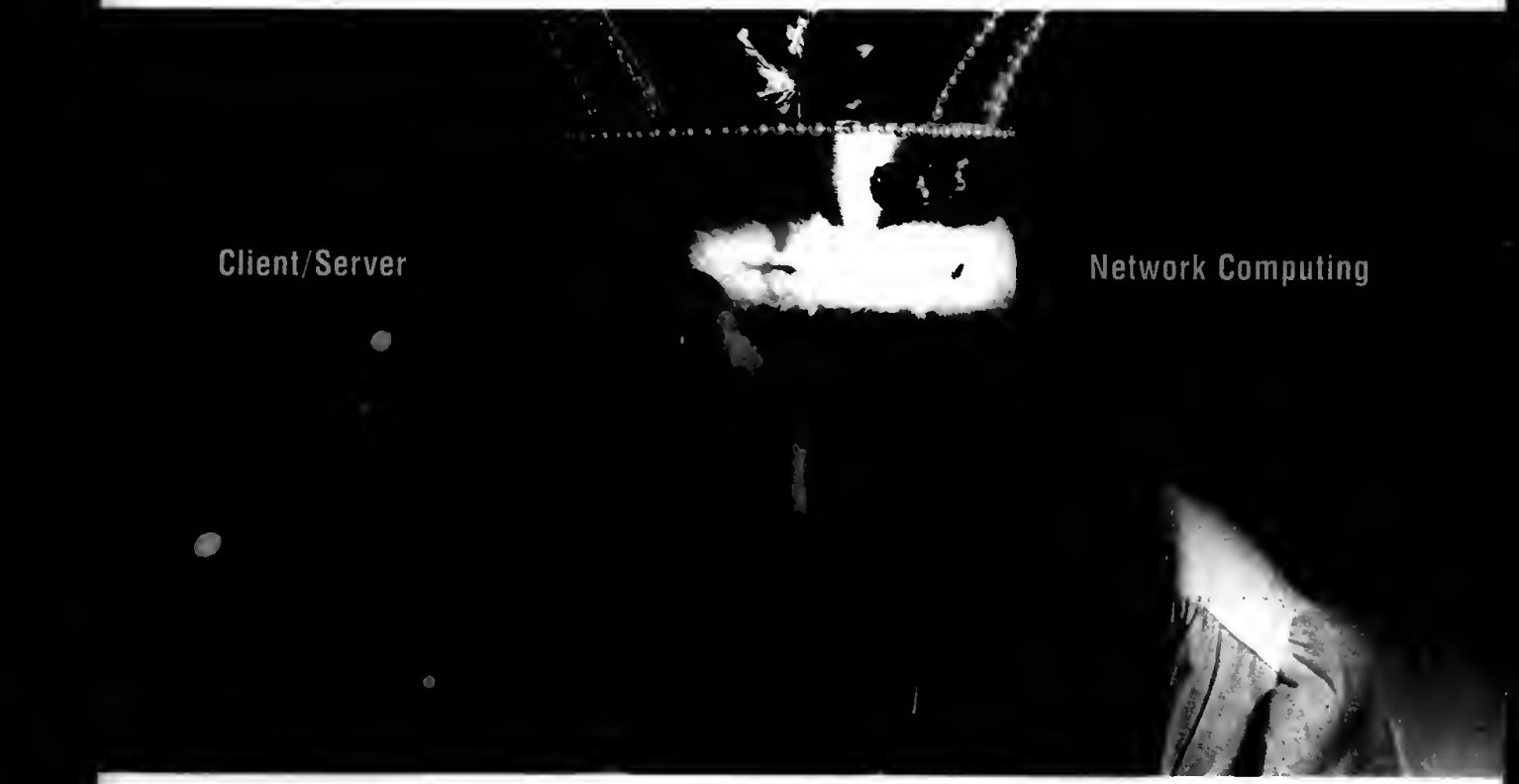

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The Enterprise Network

LANs • WANs • Network Management

Briefs

[redacted]

MIXED MESSAGES

The benefits and drawbacks of unified messaging

PROS	CONS
→ Reduces the number of places workers need to check for incoming messages	→ Many systems work only with the vendor's own voice-mail system
→ Lets mobile users check E-mail without a laptop	→ Crosses political boundaries of IT and telecommunications
→ Can lower overall administration costs because E-mail, faxing, paging and voice mail are centralized	→ Lacks hooks to other corporate applications, such as databases, workflow and electronic-commerce systems

Unified messaging starts to draw users

By Barb Cole-Gomolski

UNIFIED MESSAGING is like the weather: Everyone talks about it, but so far at least, not many are doing anything about it.

But some information systems managers are testing the waters. They are drawn by new standards and products that make it easier to give mobile users a single point of access for all their electronic- and voice-mail messages from multiple devices.

"It's the convenience of having everything in one place," said Bob Winterton, a systems specialist at Consolidated Edison of New York, Inc., which is considering unified messaging software from Lucent Technologies, Inc. in Murray Hill, N.J.

Earlier this year, Lucent bought Unified Messenger from Milpitas, Calif.-based Octel Communications Corp.

Unified messaging has the potential to "greatly improve the flow of information in the company," Winterton said. The company recently migrated to Microsoft Corp.'s Exchange, and it is now considering other ways to improve its messag-

Unified messaging, page 48

Keeping up with remote access needs

By Matt Hamblen

NETWORK MANAGERS face growing demands for remote access to make their companies run faster. But opinions vary on whether they should expand with in-house solutions or outsource the demand to a carrier.

Insurance Services Office, Inc. in Pearl River, N.Y., has nearly 2,000 insurance agents nationwide working remotely who need network access to update insurance claims information. They can get to the data through the Internet or by calling into Insurance Services' communications server.

Insurance Services chose to build and maintain its own servers and routers to serve remote users. So far, the company has found that it is more reliable to manage its own system, said John F. Cunnane, manager of distributed systems at Insurance Services.

"We keep the functions in-house because we have more control," Cunnane said. "We get carriers knocking on the door all the time offering service-level guarantees, but their offers never pan out. We may move the service out at some point, but it would still be tough to manage."

Remote access, page 51

Layer 3's promise far from delivery

By Stewart Deck

IS YOUR NETWORK starting to huff and puff a bit? Are your routers starting to feel the strain of playing the role of chief director for the data packets moving across the network? If so, you may be thinking that Layer 3 switching is the answer to your prayers.

CLOSER LOOK
Layer 3 switching

But it may still be too early to invest in Layer 3, according to some analysts and users. The problems? True Layer 3 products are just starting to appear, vendors are still trying to set some of the necessary standards, and some of the small companies that have products coming out in the next couple of months may not even be around this time next year because of the large networking companies' appetite for acquisitions.

"We're about to see a whole new class of products" that can route packets at nearly the same speed that wire and switches allow, said Melinda Le Baron, research director at Gartner Group, Inc. in Stamford, Conn.

Until recently, very fast data speeds were the domain of switches, which pass data through without analyzing it closely.

Switches function at a layer of network addressing known as Layer 2, which lets them verify that a path is open between them and a single other device

Layer 3, page 48

POS system upgrade keeps the beer flowing

By Laura DiDio

BREWERS RETAIL, INC. is ringing up sales faster and keeping closer tabs on its inventory after upgrading from ancient CP/M machines to a customized point-of-sale (POS) application. The software runs on Microsoft Corp.'s Windows NT Workstation and NT Servers.

Brewers Retail, a private company owned by Canada's major brewers, is the largest beer distributor and retailer in Canada, with $2 billion in annual sales.

To stay ahead of competitors, Brewers tossed out its outmoded POS dumb terminal net-

System upgrade, page 49

Brewing a POS system

Brewers Retail's benefits of replacing a dumb terminal/mainframe point-of-sale system with NT Workstation:

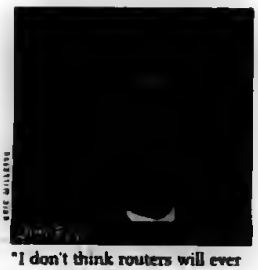
- Inventory-control management and ordering capabilities at each location
- High reliability and data integrity
- Store managers can generate reports
- Network-based security access for individual stores
- Managers can modify screen views to display products and inventory levels

Switches won't wipe out routers

IMHO

Layer 3 switches are supposed to decrease the need for routers by adding high-performance routing to switches. So what is the future of the router? we asked.

— By Bob Wallace



"I don't think routers will ever go away. We're seeing the functions of routers being included in switches. That doesn't mean routing is going away; it's just taking another form — that of a Layer 3 switch. We may not be looking at a router-centric world, but routers are still on most LANs."

Jim Fey
Director of strategic technology
PMI Mortgage Corp.
San Francisco

"The router will play a key role as the cornerstone of electronic commerce. It's used by the internal customer and external customer with extranets. It facilitates interaction. If you remove the router from the equation, you remove users' ability to communicate."

Timothy Regan
Manager
Advanced information department
Federal Express Corp.
Memphis

"Routers today dominate the enterprise IP market. In the 21st century, the routers will dominate the carrier IP market. You'll have little ones for access and large core routers for backbone use. But the intermediate-size ones that have been the mainstay of the market will disappear over the next 10 years."

Tom Nolle
President
CIMI Corp.
Voorhees, N.J.

"Routers are slowly being eliminated with the advent of Layer 3 switching, but [they] won't go away for a long time. There will be a place for physical routers until Layer 3 really takes off. On the downside, routers can slow things down on [backbone] networks."

Edward Bianco, CIO
Lowell General Hospital
Lowell, Mass.

"Routers serve an important function but tend to be bottlenecks in networks. I see routers serving a vital function as a link into intranets. Routing is a requirement whether it comes from a router, switch or something else. It'll be tough, though, to replace something that's so firmly entrenched."

Ron Rimmer
Network manager
Wake Forest University
Winston-Salem, N.C.

Layer 3 switching

CONTINUED FROM PAGE 47

on the network. That means switches must pass a packet among several switches until one of them recognizes that packet's destination and delivers it.

Routers that function at Layer 3 look into each packet to find an address. That makes them far slower than switches. Routers contain tables of all the addresses on a network and can deliver a packet to its destination directly. That is slower on small subnetworks but much faster on campus networks, for example.

Yamaha's Ed Leard: The company has added Layer 3 switching

A simple way to increase a switch's intelligence is to add a routing module to its chassis or add a routing process to the switch itself.

Those add-ons let a switch continue to function as it always has, but they allow it to pick up packets as they enter or leave the switch and route them more directly toward their destinations. Such retrofits add intelligence to a switch, but they don't give it the capacity of Layer 3 switches. Le Baron calls that "Layer 2 and a Half" switching.

San Jose, Calif.-based Cisco Systems, Inc., with its NetFlow Switching, and Rochester, N.H.-based Cabletron Systems, Inc., with its SecureFast Virtual Networking, take that approach. But both add plenty of other proprietary technology, which may cause interoperability problems.

That is a concern for Trey Layton, global infrastructure coordinator at Eastman Kodak Co. in Rochester, N.Y. Layton has added Layer 3 switching from Cisco "to increase [data] forwarding rates and move huge amounts of research and development data across our subnets," he said. "But when lots of different companies do their own [proprietary] thing, it's troubling."

Ed Leard, general manager of information systems at Yamaha Corporation of America in Buena Park, Calif., added Layer 3 switching capabilities to his firm's Asynchronous Transfer Mode-based network for reasons similar to Kodak's.

"We wanted to gain efficiencies and increase scalability and capacity at the same time because we don't want to revisit this every three years," he said.

Yamaha intends to use its network for synchronized voice and video in the near future in order to hold "jam sessions" with far-flung musicians who play Yamaha instruments.

Mike Rothman, an analyst at Meta Group, Inc. in Stamford, Conn., warned in a recent report, however, that many existing Layer 3 switches require an additional routing protocol that technicians must learn and add to existing routers.

Several analysts said users should wait a few months for network upgrades. Within two to three months, there will be new gigabit-class routers, such as the new one from Extreme Networks, Inc. in Cupertino, Calif., that Charles Hofstaedter has put in place at St. Edwards University in Austin, Texas.

Hofstaedter, director of network services at the university, said he was able to off-load routing from the network's main router "and improve throughput tremendously with a minimal investment."

"Now is not the time to make decisions on this technology," said Paul Zagaeski, an analyst at Giga Information Group in Cambridge, Mass. "Wait if you can." □

What about Layer 4?

At the most recent Networld/Interop trade show, some users may have been intrigued by vendors whispering about going beyond Layer 3 switching to Layer 4. So is Layer 4 the next big thing in networking? Well, no, probably not.

Layer 4 switching is a "silly" phrase that vendors have come up with to wow customers, said Melinda Le Baron, research director at Gartner Group. "This isn't new at all. It's switching based on protocol criteria. Routers and bridges in the early '90s could do this," she said.

The switching is based on TCP and User Datagram Protocol (UDP) ports in the Internet Protocol suite. TCP is a transport layer protocol, and UDP is a protocol that describes how messages reach applications in a destination computer.

The only new feature is the attempt to load-balance applications across several servers based on these TCP and UDP ports. "Other than that, this isn't new at all," Le Baron said. "This is just repainting the same old Chevy." — Stewart Deck

Unified messaging

CONTINUED FROM PAGE 47

ing capability, he said.

In the past, lack of support for unified messaging has made implementations difficult. But a new crop of unified messaging products supports popular platforms, including Exchange, Notes and Internet mail networks.

On the voice side, widespread support among voice-mail vendors for the Voice Profile for Internet Mail standard makes it easier to let users access voice and fax messages using any E-mail client that supports the Post Office Protocol 3 specification.

San Jose, Calif.-based MediaGate, Inc. plans to build the capability into its line of remote access servers using IPost, universal messaging software it acquired last week when it bought InterResearch & Development Group, Inc. The servers are aimed at corporations and Internet service providers.

NOW A POSSIBILITY

Two years ago, unified messaging would have been out of the question at Texaco, Inc. in White Plains, N.Y., because the oil industry giant had more than a dozen E-mail systems. But now that it has moved nearly the entire company to Exchange, it is looking at adding unified messaging.

The biggest advantage would be that mobile employees would have more ways to retrieve messages, said Betty Zimmerman, Texaco's manager of messaging. But the company is only in the tire-kicking stage of its evaluation, she said.

"Anyone who travels for his job faces the problem that your laptop becomes your office on the road," said Timothy Hovland, a systems analyst at Gill Hall, Inc., a consultancy in Deland, Fla., that uses a unified messaging system in conjunction with Internet mail. Without unified messaging, "it can be difficult, if not impossible, to get your faxes" from the road, he said.

But there are political as well as technical issues involved.

In most companies, IS handles E-mail, and the telecommunications department handles the telephone system. Unified messaging systems straddle both worlds and force those disparate groups to work together. □

System upgrade keeps beer flowing

CONTINUED FROM PAGE 47

work. The network had caused weekly outages at Brewers' 400 retail stores and 65 distribution centers throughout the province of Ontario, said Gene Kotak, chief information officer and general manager of information services. Brewers now gets accurate stock information and can project its inventories and labor requirements six weeks in advance, he said.

The NT machines run sales applications that were customized in part by Microsoft. The new software and operating system give Brewers reliability and scalability that weren't possible with the prior POS system running on Digital Research, Inc.'s CP/M operating system, Kotak said. The 64K system could support only a maximum 20M-byte hard drive. "It just ran out of horsepower," Kotak said. The system was so obsolete Brewers couldn't get replacement parts for the PCs.

"Our Windows NT network has been rock-solid. The old CP/M POS system used to cause at least one crash a week at each store, and the average downtime was about six hours."

– Gene Kotak, CIO, Brewers Retail

"Crashes were commonplace, slowing business to a crawl. Imagine long lines of irate customers unable to purchase beer — not a pretty sight," Kotak said. The network outages forced Brewers' 2,000 full-time workers and 2,500 temporary workers to look up price lists and get out pencil and paper to track sales. "During peak hours, we process eight customers a minute — that slowed dramatically," he said.

Problems also occurred behind the scenes, said Raymond Kane, a retail checker at Brewers in Oakville, Ontario. "Once the prior POS system came back online, we had to manually input all sales information into the system in summary form, which wasn't necessarily accurate."

COST SAVINGS

"Our Windows NT network has been rock-solid," Kotak said. "The old CP/M POS system used to cause at least one crash a week at each store, and the average downtime was about six hours. By contrast, we now have only about two dozen crashes total in 400 stores. Downtime lasts one and a half hours maximum, and we don't lose data. We're saving tens of thousands of dollars in manpower hours," Kotak said. The POS limitations also lacked the ability to project low or excess stock situations.

Brewers narrowed its operating system choices to two, then picked NT over SCO, Inc.'s Unix because of its lower cost, ease of use and high reliability. Microsoft reinforced its case by helping the distributor build customized drivers for its cash management, inventory management and labor reporting applications, Kotak said.

"Microsoft wanted our business. They worked with us to build the appropriate software drivers for retail peripherals and specialized devices like receipt printers and touch screens," Kotak said.

Thus far, the only significant problem has come from running 16-bit applications in the 32-bit NT environment. "We get memory management errors that crash the system, but we'll eliminate that when we upgrade to 32-bit applications," Kotak said. □

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Managing Re-Systemization

How U S WEST Dex moved from a mainframe to a distributed environment with PATROL

U S WEST Dex, one of many U S WEST companies, sells Yellow Pages advertising, related mailing lists and other products that are derived from telephone directories. In all, they publish over 300 directories with over 42 million printed copies.

Handling all of this publishing and taking care of nearly half a million USA and international clients calls for complete distribution of data 24 hours a day. All of the company's critical applications must be available to thousands of users.

The original mainframe needed upgrading and the decision was made by U S WEST Dex management to move to a distributed environment. Over a period of many months, operational processes were decreased on the mainframe and increased on the distributed systems.

U S WEST Dex created a new group called the "System Management Center" (SMC) to recommend products to help them ease and manage the transition. As interaction with the SMC progressed over a couple of months, one partner relationship between two vendors stood out, that of Hewlett-Packard and BMC Software.

"We found that the partner relationship between these two companies was able to satisfy a broad range of our needs. The joint presentation of their individual products tended to complement and even strengthen each other. We saw clear advantages to both vendors working with us as a single team rather than separately. We awarded them our contract jointly and plan to order more later this year," explains Project Manager Henry Vargas of U S WEST Dex.

"Our business-critical applications have been re-architected into the client/server model to help give us a competitive advantage. We use the Hewlett-Packard systems due to their mission-critical capabilities, high performance and the ability of Hewlett-Packard and BMC Software to put together a solution."

These products will provide U S WEST Dex with the ability to collect information from their new distributed computing environment and process it to report the status of individual elements within their IT environment. They will be able to graphically show the current status of all elements of their enterprise, including networks, systems, applications and databases, and manage them through one console. They should realize a seamless, easy transition of critical systems with reduced user downtime.

"We are pleased to be working with BMC Software on this project," said Business Development Manager Travis Muesing, of Hewlett-Packard. "We have worked with them before and have always felt that our products, services, support and education complement each other. Together, we can always provide our customers with a complete, timely and cost-effective solution to their integrated network and system management needs."

U S WEST Dex plans to incorporate more of the Hewlett-Packard and BMC Software products to provide additional support for IT operations, performance monitoring and IT administration.

"HP is reselling PATROL® technology and products because of the tight integration BMC Software is delivering through the HP OpenView enterprise solutions. Together, HP OpenView and PATROL provide the highly desired complementary functionality that our customers need today in the areas of application and data management."

Johnnie-Mike Irving, General Manager
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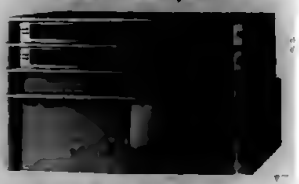
Remote access support

CONTINUED FROM PAGE 47

As Insurance Services' remote access needs grow, Cunnane could end up using one of the many varieties of remote access concentrators and routers offered by several vendors.

3Com Corp. in Santa Clara, Calif., recently announced four products, collectively called the SuperStack II Remote Access 3000 family. They can handle up to 144 modem ports, or calls, on T1 connections to the Internet.

3Com's Superstack II Remote Access 3000 options:



- Access Router 3000
- EdgeServer Pro 3000 (using NT)
- Access Concentrator 3000 for up to six T1 or PRI connections or 160 modem ports
- Redundant power module with four independent power supplies

SuperStack's access concentrator module handles those connections. A router, an optional Windows NT-based server and an optional module with four independent power supplies for the unit round out the offering, which can be stacked and centrally managed.

PictureTel Corp. in Andover, Mass., has been using the 3Com product for a month to allow workers both on the company LAN and those working remotely to share access to virtual audio and live video conference rooms.

"Their first prototype didn't work too good, but they made changes, and things are humming now," said Marti Takessian, product manager at PictureTel.

SuperStack II's price of $350 per port puts it in the ballpark of offerings from competitors.

But another network manager in the process of setting up a remote access service for 20 users said $350 per port is too expensive.

"I'd rather not purchase any hardware because then I don't have to worry when the next great thing comes along, and I keep overhead costs down," said Jack Reed, telecommunications manager at Grumman Systems Support Corp. in Longmont, Colo.

"I'm a one-man IS shop, and I live an hour away from work and don't want to have to come in here when things go wrong," he added.

Instead, Reed is considering an offer by carrier US West, Inc. in Denver to provide his company with a frame-relay dial-up service for remote access users. US West allows remote users to call up a server on its premises. It then passes the connections to the Grumman network. ☐

NEW PRODUCT

Artisoft, Inc. has announced CoSession Remote 32 Version 8, software that allows users to access and control remote PCs from any location.

Officials at the Tucson, Ariz., company said the software lets users transfer files, run applications, conduct keyboard or voice conversations and/or observe the operations of a distant user.

It costs $219 for a two-PC version.

Artisoft
(520) 744-2550
www.artisoft.com

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From Desktop to Enterprise

Leaders in I/O Technology

The demand for device driver portability between operating systems and host platforms, combined with increasing requirements for intelligent, distributed I/O processing has led to the development of the Intelligent Input/Output, or I_2O specification. BMC Software and Intel Corp. are working closely with the I_2O Special Interest Group (SIG) to bring I_2O-compliant technologies to market, including integrating PATROL Management solutions with the Intel i960RP I/O processor.

"The importance that the Intel/BMC relationship brings to the market is that BMC innovation in I/O technology naturally makes them a leader in this collective new I/O-centric industry," states Alan Steinberg, Director of New Business Development, Connected P.C. Division at Intel. "Currently we have companies coming in from the desktop and from other areas of the industry that don't necessarily have the Enterprise experience BMC Software has to deal with the type of I/O that is needed in what could be called the new 'open mainframe' world."

Steinberg envisions a world where Microsoft will provide the main operating system, Intel will provide the hardware architecture and BMC Software will contribute the key I_2O-compliant management technology. BMC Software's role will be to help architect what Steinberg calls the "highly available, highly manageable open system mainframe" on the I/O space.

Bob Beauchamp, Vice President of Strategic Marketing and Corporate Development for BMC Software, agrees. "The pervasiveness of the i960 chip in the Windows NT and NetWare environments, combined with BMC Software's PATROL technology, will empower customers with unprecedented management and monitoring capabilities from the application to the motherboard."

Clearly, the ability to gather statistics regarding I/O is a great step forward. The PATROL Application Management Suite completes the picture by correlating I/O statistics with the applications that are utilizing the I_2O components or sub-system. This allows unprecedented optimization capabilities, such as automated load balancing, cache reallocation, and the rerouting of network traffic. All of these capabilities can be performed on demand and are based on the performance requirements of the applications.

Currently, no two vendors come as close as Intel and BMC Software in providing this comprehensive approach to I/O processing and manageability.

"We've moved into a new paradigm where I/O is as important as the central CPU technology," states Steinberg. "This shift will allow BMC to proliferate its management product line in the open systems environment. Pairing Intel I/O technology with PATROL is just the very beginning. It's the first product of many, as this new I/O-centered technology emerges into the marketplace, and we think it's going to be an exciting ride."

Intel

Corp. is integrating PATROL® management technology into the i960RP® I/O processor in order to provide the direct management capabilities for I/O subsystems customers are asking for.

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NEW PRODUCTS

ACCLAIM COMMUNICATIONS, INC. has announced the Acclaim 2032 and 2016 EtherWAN Switches.

According to the San Jose, Calif., company, the 2032 is a stackable routing switch with 32 ports of 10/100 Ethernet capacity and a built-in wide-area network interface for frame relay or Asynchronous Transfer Mode. The 2032 also provides link aggregation of up to eight ports to create a "fat pipe."

The 2016 is a 16-port Ethernet workgroup switch with 10/100M bit/sec. wire speeds. It can be used with a one-port Gigabit Ethernet uplink module.

The 2032 costs $9,575, and the 2016 costs $4,795.

Acclaim Communications
(408) 879-3100
www.acclaim.com

JAYCOR NETWORKS, INC. has announced the FCI-1063-CM and the FCI-1063-OM, two FibreStar PCI-to-Fibre Channel adapters with Sun Microsystems, Inc. Solaris device drivers.

Officials at the San Diego company said the adapters let users of Sun's Ultra 30 desktop workstations, which use a Peripheral Component Interconnect (PCI) bus and the Solaris operating system, access Fibre Channel peripheral devices. The Solaris device driver on the adapters is compatible with SCSI and TCP/IP. Each adapter fits into a single PCI board slot.

The FCI-1063-CM has a copper interface and costs $1,995. The FCI-1063-OM has an optical interface and costs $2,730.

Jaycor Networks
(619) 535-3121
www.jni.com

FORE SYSTEMS, INC. has announced the TS-2800, a Token Ring switch that provides Token Ring LANs with a direct connection to an Asynchronous Transfer Mode (ATM) network.

According to the Warrendale, Pa., company, the switch has an eight-slot chassis and a four-port Token Ring module. It uses "store and forward" switching and has dual ATM uplinks, so a Token Ring LAN will remain up should a path to the ATM network fail. Load-sharing capability and redundant power supplies are also included.

Pricing for the switch starts at $10,995.

Fore Systems
(412) 742-4444
www.fore.com

ZYXEL COMMUNICATIONS, INC. has announced the Prestige 1001H, an Integrated Services Digital Network (ISDN) hub and router.

According to the Anaheim, Calif., company, the hub/router combines ISDN routing for Internet and remote access connectivity with a four-port 10Base-T hub.

It features single-user account capability that lets an unlimited number of users access the Internet simultaneously while subscribing to a single IP address. The device supports a range of ISDN interfaces and the ISDN Basic Rate Interface.

The Prestige 1001H costs $499.

Zyxel Communications
(714) 693-0804
www.zyxel.com

STAMPEDE TECHNOLOGIES, INC. has announced Remote Office Gold 5.0, remote node/remote control software that now supports Windows NT clients.

Officials at the Dayton, Ohio, company said the remote dial-in software operates with Microsoft Corp.'s NT Remote Access Servers as well as all third-party communications servers that comply with the Point-to-Point Protocol.

It also provides mobile and remote users with point-and-click access to corporate networks and includes client software for controlling local or remote workstations. Corporate telephone books and Post Office Protocol lists have been incorporated.

Standard licenses are sold in 10-user increments at $54.95 per user.

Stampede Technologies
(937-291-5035
www.stampede.com

Advertisement

Smooth Transitions

Louis Poulsen & Co. smoothes their transition to SAP R/3 and open systems with PATROL

Denmark's Louis Poulsen & Co. A/S is known internationally as the manufacturer of the world-famous PH lamps, and as sellers of electrical appliances. Louis Poulsen has its production wing based in Denmark, but sales and distribution offices are spread around the world on four continents. Consequently, it is a company with simultaneous requirements for advanced production management, effective logistics, and continuous budget control across a geographically distributed environment.

To more effectively meet these requirements, Louis Poulsen decided to move their IT operations from an IBM mainframe system to an SAP R/3 solution running on IBM RS/6000 hardware with the Informix RDBMS.

The benefit is obvious when the entire system is running smoothly – no matter where in the world requests come from, everyone receives up-to-date and exact information. However, when things are not running smoothly, the problems are also obvious.

Louis Poulsen realized they could more effectively utilize client/server solutions if they made automated management part of their overall management strategy. Their first step was to introduce the IBM NetView product for management of their network environment. The next step was to incorporate automated application and database management through the PATROL® Management Suite of products from BMC Software.

Peter Jacobsen, manager of IT operations states that, "without a doubt, automated monitoring of the Informix database, especially the PATROL features that help ensure log files do not overflow, has helped avoid a number of situations that would otherwise have resulted in an outage."

When BMC Software announced in 1996 a PATROL Knowledge Module that would proactively manage SAP R/3, it was an easy decision for Louis Poulsen to trial the product. "SAP R/3 comes with a systems management tool called CCMS," says Jacobsen, "but to use it you need manual interaction. PATROL gave us the ability to automatically monitor relevant R/3 parameters and, at the same time, have information about them presented to us in context with other information from PATROL about our databases and platforms. With PATROL, we get a complete overview about how our application environment is operating."

Through PATROL, Louis Poulsen learned of a number of important parameters in their application environment that could be monitored and tuned to support higher application availability and improve performance – parameters they didn't even know the existence of before PATROL. Now, at any time, they have instant access to this important information. Says Jacobsen, "With PATROL, we have a tool that allows us to drill deep into our systems, applications and databases for information. Plus, PATROL lets us know if changes we are making in one area of our environment will have a negative impact on other areas. There are still many things we have to learn about PATROL, but we definitely know it is necessary for future management and tuning of the system as well as our insurance for keeping up with the end users' demands for availability."

"SAP *believes that PATROL® currently offers one of the leading solutions for in-depth monitoring and management of R/3. It is important that our customers have management tools like PATROL that can ensure optimal performance and high availability.*"

Dr. Arnold Niedermaier, Technology Marketing SAP AG

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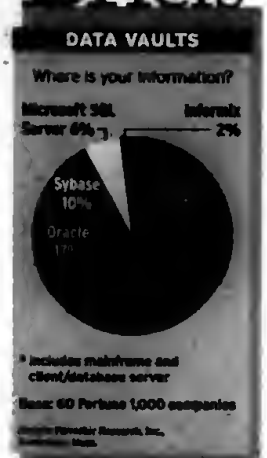
Software

Briefs



• Benefits extranet allows natural queries

Amex to users: Speak English

By Craig Stedman

THE STRATEGY taken by American Express Co.'s retirement services unit on a new data analysis application for its corporate clients boils down to two words: plain speaking.

Amex wanted to hook up customers to an extranet so they could do online analysis of the $16 billion worth of 401(k) plans it manages. But the company didn't want to intimidate benefits administrators and retirement plan managers with heavy-duty technology.

Its answer was natural language query software, which lets users write questions in plain English instead of building database queries by searching through menus for the data elements they need.

NO KNOWLEDGE NEEDED

Point-and-click query tools require a basic understanding of data structures, said Bob Procaccini, director of strategic technology development at American Express Retirement Services in Minneapolis. "But with this, you type a question, and more often than not you

Amex, page 60

Cross-platform issues covered in Mac Office 98

By Gordon Mah Ung

MICROSOFT CORP.'s Office 98 Macintosh Edition will let Macintosh users edit and read files they haven't been able to use since the introduction of Office 97 for Windows 95, including attachments to electronic-mail messages, officials said.

During a recent demonstration of the beta, the new suite looked virtually the same as its Windows 95 counterpart.

Office 98 for the Macintosh offers the same flat-button user interface, and commands and functions that are similar to the Windows 95 suite. The new suite also offers the same background spelling and grammar checking, table drawing and interactive helper, called Office Assistant.

With Word, Excel and PowerPoint also supporting Visual

Office 98, page 60

REVIEW▸ *Outlook 98*

Beta is a big improvement

By Howard Millman

MICROSOFT CORP.'s Outlook 98 makes Promethean strides toward compensating for the inadequacies of its predecessor, which shipped with Office 97.

The new version, now in beta testing and scheduled for release in the second quarter next year, offers significantly improved integration among its contact management, scheduling, calendaring, electronic-mail and Internet tools.

Top honors among dozens of enhancements goes to its intuitive "Outlook Today," an intelli-

Outlook 98, page 60

Suite comes to aid of online help

▸ *Blue Sky seeks to bridge HTML/Windows gap*

By Gordon Mah Ung

IN THE ONGOING CLASH between Microsoft Corp. and Netscape Communications Corp. for the desktop browser market, not even the application developers' help formats have been left untouched.

Microsoft is pushing its HTML Help, while Netscape advocates its NetHelp2 technology. Neither help format works on the other browser. And developers need to consider continuing to support the Windows 95-native WinHelp format.

To help sort out those issues, Blue Sky Software Corp. in La Jolla, Calif., has released WinHelp Office, which supports the two emerging Hypertext Markup Language (HTML) standards and the existing Windows help format.

WinHelp includes a new version of RoboHelp 5.0 to create NetHelp and WinHelp formats. RoboHelp 5.0 is an add-in to Microsoft Word 97 that lets users create WinHelp, HTML Help and NetHelp files from the same Word document.

Blue Sky also has introduced a WYSIWYG editor called RoboHTML 1.0 solely to edit HTML

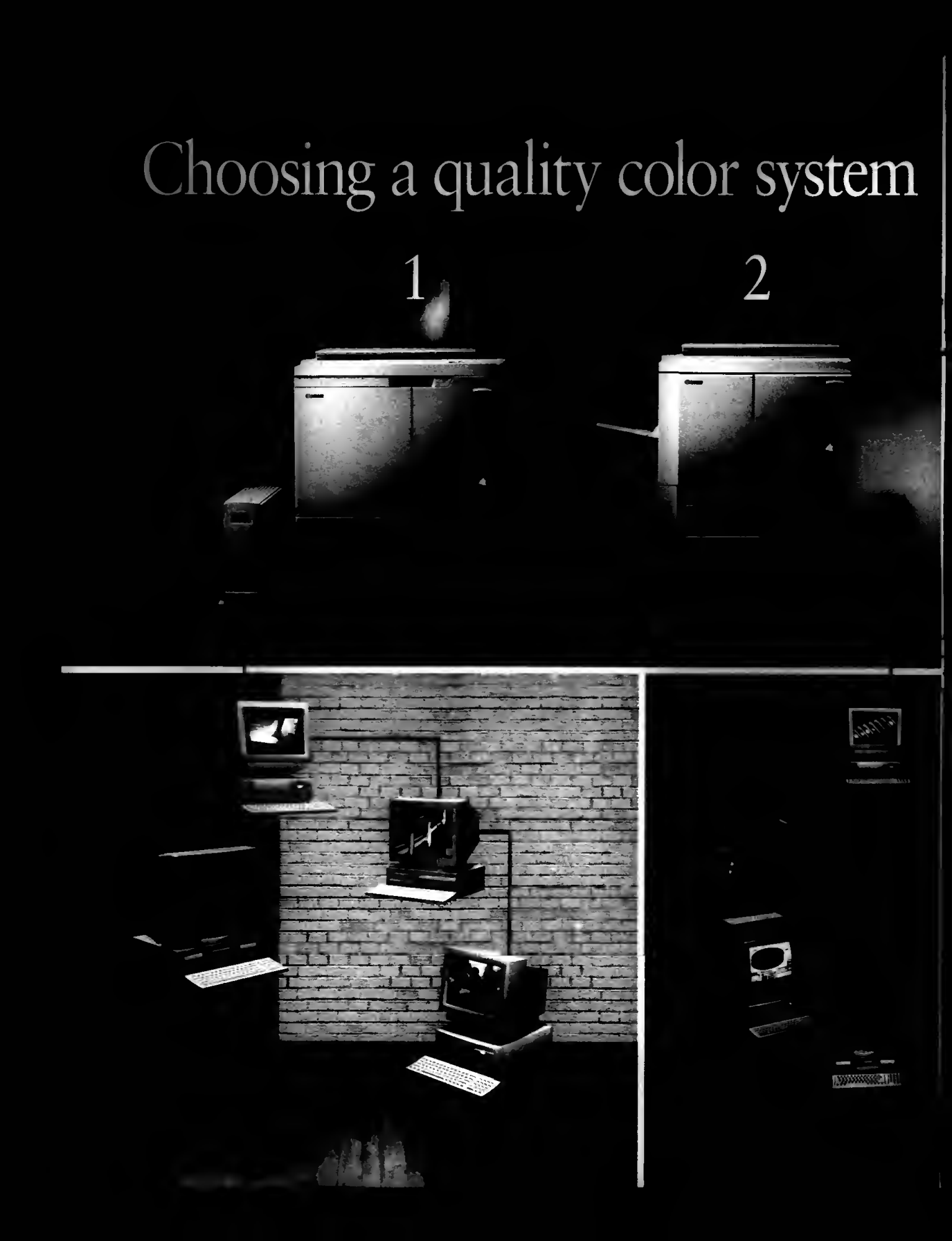
Blue Sky, page 60

HELP! I NEED A STANDARD

A comparison of the various help formats

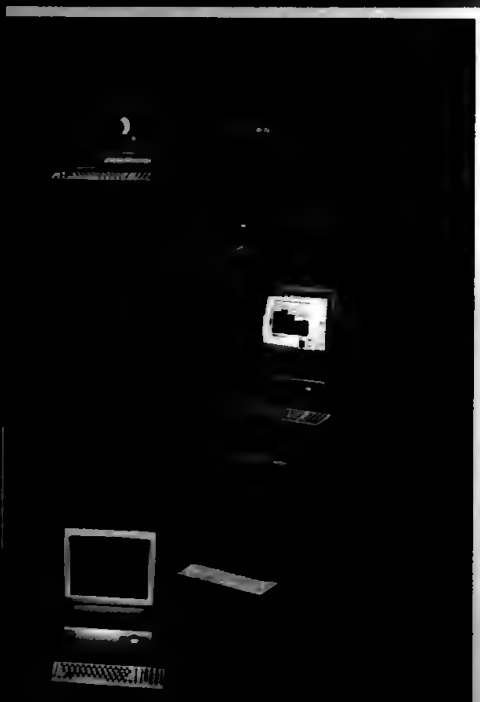
Format	Requires/supports
WinHelp	Supported on 16- and 32-bit Windows platforms. The current standard.
HTML Help	Requires Internet Explorer or a free display engine provided by Microsoft. Will support Windows, Macintosh and some Unix operating systems.
NetHelp	Requires Navigator 4 or later

Choosing a quality color system



for your network is as easy as

3



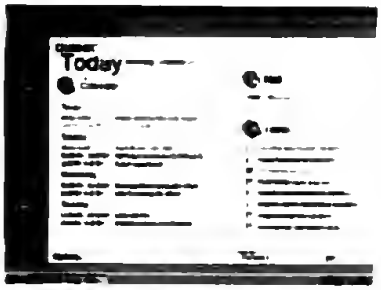
REVIEW▸ *Outlook 98*

Beta shows improvement

CONTINUED FROM PAGE 57

gent day-at-a-glance global planning tool. The tool has a HyperText Markup Language (HTML) interface, complete with hyperlinks. It displays an entire day's calendar, pending E-mail and a task list, all logically arranged on a single screen. A mouse click drills down to expose detail.

This advanced messaging and collaboration package is best suited for corporate users who need to manage large volumes of E-mail and fax messages and those who participate in companywide calendaring.



Outlook 98 is best suited for corporate users who need to manage large volumes of E-mail and fax messages

Its modest project management features simplify planning and managing appointments and to-do lists.

I tested an early beta release of Outlook 98 on a Windows 95 machine; a second beta is scheduled for this month. Microsoft will offer a free upgrade to registered Office 97 and Outlook 97 users but hasn't set a purchase price.

Outlook 98 expands its support of Internet messaging, directory and security standards. They include Post Office Protocol 3/Simple Mail Transfer Protocol, Internet Message Access Protocol 4 and Lightweight Directory Access Protocol. Secure/MIME support safeguards E-mail content by providing digital signature and encryption capabilities. Outlook also lets you share your "free/busy schedule" with other Internet users once you give them the uniform resource locator for your schedule.

VCard support automates the exchange of contact information such as telephone numbers and addresses. Users can drag and drop VCards they receive via E-mail on to their contacts folder to automatically create a listing.

Outlook's NetMeeting teleconferencing capability lets users schedule a teleconference. When the appointed time arrives, NetMeeting launches and automatically connects you to the other participants.

OTHER FEATURES

Other new or substantially improved features let you color-code E-mail to highlight mail received from important addresses. You can likewise flag messages so they generate a reminder for you to follow up.

You also can control how you view your pending E-mail. For example, autosummary displays a two-line peek at each message. A previewing function can display a complete message in a frame instead of a full screen.

Many users will appreciate the ability to drag and drop messages directly into their calendar, converting them into appointments or reminders.

A new junk-mail filter system can help keep your in-box spam-free, which may be necessary given Outlook's support for graphics-rich HTML formatted E-mail.

Outlook will work competently with dial-up connections and across a LAN.

But when it's used as a client for Microsoft's Exchange Server, it offers more collaborative computing features such as building custom workflow routing and tracking rules.

Added functionality also includes the ability to delegate file read/write/modify authority to public files in your shared workgroup.

And it appears that Microsoft, to its credit, has redesigned Outlook so users get about the same benefits regardless of which browser they use, Microsoft's Internet Explorer or Netscape Communications Corp.'s Navigator. □

Millman operates Data System Service Group LLC, a vendor-independent consultancy in Croton, N.Y. He can be reached at hmillman@ibm.net.

PRODUCT REVIEW
▸ *Outlook 98*

OVERALL GRADE A-

MICROSOFT CORP.
Redmond, Wash.
www.microsoft.com

Price: Not available

Grade: A- (assuming it delivers on rich features promised by the beta)

Pros: Tightly integrates E-mail and fax with calendaring, scheduling and contact management.

Cons: Most advanced features may work only with Exchange Server.

Amex

CONTINUED FROM PAGE 57

get an answer," he said.

And if the natural language software doesn't understand what a user is asking, it will suggest different wording that can be used to tweak the query, Procaccini said.

Natural language querying "is just a trickle" in the data analysis pipeline now, said Wayne Eckerson, an analyst at Patricia Seybold Group in Boston. But the software's ease of use could help broaden its appeal as more companies use the World Wide Web to open up data warehouses to customers, he added.

And the technology is starting to become more mainstream. For example, Microsoft Corp. built support for English-based querying into the Enterprise Edition of its SQL Server database that is being released this month.

Amex tried previously to get its 401(k) clients to use a standard query tool. But Todd Wold, marketing manager at the retirement services unit, said only a small number of Amex's 360 corporate clients braved that software. The software didn't work on a Web browser and required that data be downloaded to PCs.

EXTRANET WIZARDRY

For the ExpressLink extranet, Amex turned to English Wizard, a natural language tool from Linguistic Technology Corp. in Littleton, Mass. The extranet went live last spring and is being run by about 60 external users, Wold said. To cover its costs, Amex charges clients $2,500 up front, plus a $1,500 annual support fee.

Don Mengel used ExpressLink while working as 401(k) plan administrator at Carlson Cos.' corporate operations in Minneapolis. English querying was a bit slow and cumbersome for Mengel, who had mastered the standard query software that Amex offered before.

"But for someone who hasn't been exposed to query tools yet, this is much more user-friendly," Mengel said. "I think the old system scared a lot of people away." He was transferred last month to a new job at Carlson's T.G.I. Friday's restaurant chain.

The query tool isn't all there is to ExpressLink. Users also can read monthly reports online, check call center statistics and send electronic mail to their account managers. □

Mac Office 98

CONTINUED FROM PAGE 57

Basic for Applications. Microsoft said the new suite allows application macros written on the Windows side to be used on the Macintosh side.

Although the Windows and Macintosh products appear similar, Microsoft officials said they wanted to make the suite fit Macintosh user aesthetics — a sensibility critics said was lacking in the last version of Office. So the new suite features appropriate colors and shapes of dialog boxes.

"I'm very excited about it," said Russ Chapman, director of information systems at The Jack Morton Co., a communications company in Boston. Chapman said his staff more often is forced to interact with documents written on the Windows platform that they can't convert even with the most recent filters.

"We're always excited when we can achieve parity with the PC side. If Microsoft is true to its word and its agreement with Apple to release simultaneous versions, that will be of great benefit to us," Chapman said.

Mike Anderson, division information technology director at the electromagnetic division of TRW, Inc. in Sunnyvale, Calif., said some divisions of the company are delaying installation of the latest Windows version until the Macintosh office version is available.

Though Microsoft officials said end users should be able to use either application without much retraining, Anderson said that wasn't much of an issue for his division because nearly all its seats are Macintosh.

Analyst Tim Bajarin, president of Creative Strategies in San Jose, Calif., said the new version, due this winter, reconfirms Microsoft's commitment to Apple Computer, Inc. in Cupertino, Calif. The two historical enemies buried the hatchet earlier this year when Microsoft said it would invest $150 million in Apple. □

Blue Sky

CONTINUED FROM PAGE 57

Help files, Gordon Varney, senior information manager at Descartes Systems Group, Inc., an independant software vendor in Waterloo, Ontario, said his company chose HTML Help over NetHelp because it wasn't living in a browser environment.

STANDARDS

Varney said Descartes also decided to develop for HTML Help instead of WinHelp because it is the stated standard of Microsoft for the future.

Although Microsoft said it will no longer develop for WinHelp, it has pledged to support it in Windows 98 and Windows NT 5.0.

Varney said the fixed audience also helped to persuade the company to develop in HTML Help. "We have some control over our audience," he said. Users of Descartes' application will be in a 32-bit Windows environment with Microsoft's Internet Explorer already loaded.

Descartes chose RoboHTML because it seems to be the most comprehensive product on the market, Varney said.

"I was really pleased. It worked right off the bat," he said.

John Harter, a technical writer at SBS Technologies, Inc. in Carlsbad, Calif., said he appreciated the WYSIWYG interface of RoboHTML.

"I personally feel people are going to move further and further away from WinHelp. I think the world is moving toward HTML Help," he said.

John Dunkle, president of Workgroup Strategic Services, Inc. in Portsmouth, N.H., said it isn't clear which HTML help system will succeed, although the rival systems "will probably have to converge."

WinHelp Office costs $699 and includes RoboHelp 5.0 and RoboHTML, plus 16 help authoring tools. □

Servers & PCs

Large Systems • Workstations • Portable Computing

Briefs

Sciuter gets upgrade

Storage Corp. in Santa Clara, Calif., this week will announce upgrades to its Sciuter virtual tape systems, adding disk cache and channel attachments. Virtual tape uses disk arrays to cache data and then fill tape cartridges so all the tape cassettes in a library are filled. Storage will expand the disk cache from 100G bytes to 900G bytes by January and up to 1.5T bytes by late next year.

Backup AS/400 deal

IBM is slashing the price of its network connection technology when a new AS/400E is used as a hot backup system for high-availability applications. The price cut comes as a $3,500 rebate through year's end on IBM's Opti-Connect or alternative technology.

Notebook price cuts

Dell Computer Corp. in Round Rock, Texas, has cut prices on some notebook PC models. For example, the price of an Inspiron 3000 notebook, with a 233-MHz MMX processor, a 13.3-in. active-matrix display and a 2.1G-byte hard drive, was cut from $3,799 to $3,399. The Latitude CP, with 233-MHz Pentium MMX processor, a 13.3-in. active-matrix display, a 3.2G-byte hard drive and 32M bytes of RAM, costs $4,199, down from $4,699.

MAINFRAMES GROW

Future mainframe MIPS purchases will come from the following areas, in order of revenue generation:

- Legacy application growth
- New S/390 applications
- Year 2000 and European currency conversion
- Alternate platform support
- Unix consolidation

Source: Gartner Group, Inc., Stamford, Conn.

Amoco hopes its Fibre Channel network will pay off in the Gulf of Mexico

Search for black gold

▸ *Amoco installs Fibre Channel network to step up hunt for oil deposits*

By Tim Ouellette

AMOCO CORP. IS counting on new Fibre Channel technology to help speed up its search for oil reserves in the Gulf of Mexico. The petroleum giant has installed a Fibre Channel-based network to improve the way huge seismic data models are accessed by geologists at its Offshore Business Unit in New Orleans, said Amoco technical consultant Delbert Johnson.

The result could be a faster turnaround in finding petroleum deposits suitable for extraction without disrupting existing operations. The goal is to get oil to market ahead of Amoco's competitors.

Fibre Channel is an interconnect protocol between computer devices that lets users get around the current cabling length, device and performance

Fibre Channel, page 63

Power Computing bows out

▸ *Macintosh clone users see less choice, higher prices ahead*

By Kim Girard

AS POWER COMPUTING CORP. phases out the last of its Macintosh clone stock and ponders its future, users say they will miss the company's high-quality machines at below-Apple prices.

"I was sad to see the clones go," said David Harden, information systems manager at the *Union Democrat* newspaper in Sonora, Calif. "I had switched over to Power Computing. They'd become our standard, and they were the best buy for the dollar."

Harden said the Power Computing desktops were easier to configure and "much more logical" than Macintoshes made by Apple Computer, Inc. in Cupertino, Calif.

Power Computing, page 63

NT storage options open up

By Tim Ouellette

AS COMPANIES PUSH Windows NT beyond departmental levels, storage vendors are following suit.

Two new disk and tape products hit the street last week for users who want to consolidate storage from multiple Windows NT servers to one storage platform.

The benefit: Users betting their business on NT applications will want to support that growing data load with main-

NT storage, page 63

Third-party tools ease hardware management

By Jaikumar Vijayan

A HANDFUL of third-party tools could take the guesswork out of hardware capacity planning and performance management in enterprise Windows NT environments.

For example, Oakland, Calif.-based Bluecurve, Inc. last week released an upgrade of its Dynameasure software, which lets administrators proactively stress-test their Microsoft Corp. Exchange messaging environments for bandwidth, capacity and other bottlenecks.

The software lets administrators simulate actual electronic-mail transactions and network traffic to figure out issues related to throughput, server response times and utilization of hardware components such as the CPU, disk or network.

Bluecurve's Dynameasure 2.0 can help answer questions related to:

Throughput: What is the overall processing capacity?

Response time: How does it change with workload/number of users?

Utilization: Which hardware component – CPU, disk or network – is creating a bottleneck?

Capacity and performance management tools such as Dynameasure have been available for years for the mainframe and Unix.

But they are still relatively new in the Windows NT server space.

Apart from Bluecurve, other vendors that offer performance management software for Windows NT include Cambridge, Mass.-based BGS Systems, Inc.; Landmark Systems Corp. in Vienna, Va.; Candle Corp. in Santa Monica, Calif.; Tivoli Systems, Inc. in Austin, Texas; and Hewlett-Packard Co. in Palo Alto, Calif.

"A lot of corporations have been able to successfully install and deploy Windows NT, but

Tools, page 63

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Rackmountable system

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THINKING

Power Computing bows out

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In September, Apple bought Power Computing's Macintosh business in an effort to eliminate Macintosh clones. As part of the $100 million deal, Power Computing agreed to sell its remaining Macintosh clones by year's end (CW, Sept. 9).

Users said they feel the loss of choice with the Macintosh demise at Power Computing.

Mark Powers, webmaster at National Geographic Interactive, Inc. in Washington, which has 400 Macintosh systems companywide, said the company saved $1,000 apiece on two Power Computing machines it bought for a lead programmer and designer.

"We were testing them and thought we could save a few dollars," Powers said. "I wish they were still around."

Powers said the company will eventually replace the Power Computing desktops with Macintoshes.

In recent months, Power Computing has reduced its staff from 500 to 150 people. It also sold off most of its Macintosh clone machines and shut down its latest project — making and selling the PowerTrip line of Wintel portables.

The Round Rock, Texas, company last week announced it halted production of the machines because of lackluster sales and manufacturing problems. But analysts said it lacked the revenue, product line and market support needed to compete in the fiercely competitive Wintel hardware market.

"They never really ramped up the volume," said Rob Enderle, an analyst at Giga Information Group in Santa Clara. "The product was up for a number of awards and was well done. I recommended it to clients."

But despite offering $5,000 high-end portables, the company lacked a revenue stream after Apple "pulled the rug out from under them," he said.

"The company's in pretty dire straits right now," said James Staten, an analyst at Dataquest in San Jose, Calif.

But Steve Kahng, president and CEO of Power Computing, said the company will announce a new strategy next spring and is developing a new product line and working with component manufacturers.

To succeed, "you need a whole line of products," Kahng said. "We have to find a new way to sell, manufacture and service." □

POWER COMPUTING'S SPIRAL

June: Company's attempt to go public fails

September: Apple buys Power's Macintosh business, leading to Power's plan to sell Windows-based portables

October: Power is sued by TCI Manufacturing over breach of contract and compensation issues

December: Power says it will stop making Windows-based portables and will reassess its business strategy

NT storage options grow

CONTINUED FROM PAGE 61

frame-class storage rather than their current departmental storage systems.

Storage Computer Corp. in Nashua, N.H., plans to announce the OmniRAID Cluster Array for Windows NT. The product is targeted at NT clusters and applications that run on more than one host system (see chart).

Because the array already supports mainframe and Unix data, early users said they believe it can handle anything Windows NT throws at it.

GOODBYE MAINFRAME

"A deciding factor for us was the fact that mainframe was already attached to this box" when we added Windows NT, said Tony Holland, data production manager at Long Motor Corp. The Lenexa, Kan., auto parts distributor is moving all its business applications from a Unisys Corp. mainframe to four 110G to 235G bytes of Windows NT storage from Storage Computer, and we have had no downtime at all with it," said Bruce Simpkin, director of information systems at Bank of Tokyo Mitsubishi Ltd. in Boston.

TACKLING TAPE

On the tape side, Storage Dimensions, Inc. in Milpitas, Calif., will announce its P1000 Library Array, a Windows NT tape subsystem with RAID software capabilities and scalability to expand backup as Windows NT processing increases.

The P1000 has a capacity of 2.1T bytes of data stored in up to four digital linear tape drives. The RAID capability comes via Computer Associates International, Inc.'s Arcserve 6.5 software. That speeds backup by letting users concurrently write backup data across multiple tape drives.

NT GETS SOME BACKBONE

Storage Computer's OmniRAID Cluster Array features:

- 54G- to 1T-byte capacity
- Support for multiple Windows NT clusters
- Automatic protection of data at the transaction level
- Optional OmniForce remote mirroring software

large Windows NT servers.

Though Storage Computer is much smaller than market leaders EMC Corp. and IBM, the company offers competitive prices and performance, users and analysts said.

One performance advantage is that the new array provides different levels of data protection, such as mirroring or RAID, for each server attached to it, said Thomas Lahive, an analyst at Dataquest in San Jose, Calif.

"We are upgrading from

Users will need tape libraries such as the P1000 to centralize the dispersed tape drives and cassettes they must now manually load when restoring Windows NT data, said Fareed Neema, president of Peripheral Strategies, Inc., a storage consultancy in Santa Barbara, Calif.

The disk and tape systems started shipping last week. Prices for the OmniRAID cluster array range from $50,000 to $250,000. The cost of the P1000 ranges from $24,000 to $63,000. □

Fibre Channel

CONTINUED FROM PAGE 61

limitations imposed by the SCSI standard found in most storage systems today. Data access rates for Fibre Channel can reach up to 1onM byte/sec.

At Amoco, a Fibre Channel switch from Ancor Communications, Inc. links Sun Microsystems, Inc. and Silicon Graphics, Inc. servers — which store the data — with visualization, modeling and analysis applications running on desktop workstations.

With companies such as Amoco, the move to Fibre Channel technology is starting to take shape. While most users won't start looking at it for their storage and clustering needs until well into next year, some early sites are taking the first steps to get the technology up and running in their networks.

"The needs in New Orleans were so strong, they just simply installed a quarter-speed Fibre Channel network to go from servers to workstations. But that is only the first step," said Henry Tan, a research associate at Amoco's Tulsa Technology Center in Tulsa, Okla.

From there, Amoco plans to use Fibre Channel to separate storage from the servers and break the bottleneck created when users must go through a specific server to get at data.

CYCLE SAVER

"We've run a couple of large servers with large SCSI RAID disk arrays, but to get data to a set of workstations, you are required to go through one of the file servers and use up processor cycles," Tan said. "If we could cluster disks with Fibre Channel and go directly to the data, we could save cycles."

Amoco could have gone with Gigabit Ethernet technology to improve access to the seismic data files, but the storage benefits from Fibre Channel won out.

With Fibre Channel, "we can get connectivity to the disk as well as servers and workstations, and that is the incremental difference with this," Tan said.

Amoco's strategy follows the path analysts expect users to take next year and beyond.

"While the initial benefits of Fibre Channel are that it is faster than SCSI, most users will really see long-term benefits with the externalization of storage in storage-area networks," said Michael Peterson, president of Strategic Research Corp., a storage consultancy in Santa Barbara, Calif.

Still, industry watchers and even vendors said more integration work must be done among different Fibre Channel switches, adapters and storage devices before a wide range of users will be comfortable installing Fibre Channel storage networks. □

Tools ease management

CONTINUED FROM PAGE 61

they are needing help in application management and performance tuning," said Joe Clabby, an analyst at Aberdeen Group, Inc. in Boston.

PepsiCo, Inc., which is in the midst of a companywide migration from Microsoft Mail to Exchange, is using Dynameasure to test remote networks and servers for capacity and performance bottlenecks.

Among other things, the company has used the software to find out how many users a wide-area network link can support before it breaks down in a real-world scenario, said Scott Wakeman, an analyst at Pepsi in Somers, N.Y.

Bluecurve's Dynameasure resides on one or more machines attached to a network. During a test, transactions are executed over the network using simulated workloads between the test clients and test servers.

A central management console will let administrators run and manage test resources and analyze results.

Dynameasure will ship later this month. Pricing starts at $195 and goes up to the Enterprise Edition, which costs $29,995. □

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Data Warehousing

Special Section: Data Mining • Decision Support • Strategy

Briefs

Industry-specific tools emerging

By Linda Wilson

IN AN EFFORT to increase marketplace acceptance, vendors are focusing their latest generation data-mining tools on specific applications or industry segments.

The reason: "Corporations are finding it difficult to take raw technologies and apply them to their business. They need solutions that can be absorbed faster so they can see the [return on investment] faster," said A. J. Brown, vice president of marketing at DataMind Corp. in Redwood City, Calif.

DATA MINING

To hide some of the complexity and broaden the base of users beyond statisticians, vendors are packaging application-specific code along with the mining engines. That makes the systems faster to implement and easier to learn.

Applications that vendors are targeting include database marketing and fraud detection. Industries for which tailored packages have been designed include retail, banking and telecommunications.

Because data-mining technology is complex, time-consuming and expensive, getting a return on investment (ROI) — and even accurate results — can be a lengthy process [CW, Dec. 1]. Data-mining tools use advanced techniques in mathematics and artificial intelligence to uncover patterns in data and develop predictive models. Those models are then used to help solve business problems.

The targeted approach is new, and most of the products are new or emerging.

Bank of America in San Francisco is evaluating a product geared toward commercial

Industry-specific, page 70

PROFILE

MCI connects with disposable marts

By Thomas Hoffman

WHEN MCI COMMUNICATIONS Corp. embarks on a two-month product promotion, it often builds a data mart using data from a telemarketing program, gets the results it needs and then shuts the mart down.

That allows the Washington-based communications giant to "meet [its] tactical and performance requirements for a short period" without having to update and manage a massive data warehouse for each project, said Kevin Strange, an analyst at Gartner Group, Inc. in San Jose, Calif.

MCI's data mart strategy maps with its business diversification. A few years ago, MCI was in the long-distance business exclusively. Now, it offers wireless, pager and other services as well. Data marts allow employees to fine-tune telemar-

MCI connects, page 70

COMMENTARY

No panaceas

SHAKU ATRE

CORPORATE POLITICS often drive strategy in the wrong direction. In data warehousing, politics can motivate a company to choose data marts over an enterprise data warehouse when it doesn't make strategic sense.

Companies often build stand-alone data marts to sidestep deep-rooted problems that are more organizational than technical. An enterprise data warehouse is based on cooperation. To build one, you need a corporate culture in which the various departments, divisions or regions of the organization are motivated to pool information into shared, available data sources. If the "fiefdoms" are so sharply delineated that nobody will share or work together, then your chances for building an enterprise data warehouse are slim.

The only people with the leverage to solve this organizational problem are top executives. An enterprise data warehouse might help them solve it, if someone can show them how. But given the expense and risk, it can be very difficult to sell senior executives on the value of an enterprise data warehouse that will pull the company's data (and people) together. To win their commitment, your business justification must offer solid and substantial benefits [CW, Nov. 17].

Problems that appear to be purely technical often really reflect a failure to win the commitment from top management that would make funds

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Industry-specific tools emerging

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banks. The product line, from HyperParallel, Inc., includes application templates called Solution Frameworks and a mining engine called Discovery.

HyperParallel has templates for the retail industry for functions such as markdown management; for banking for functions such as fee tolerance; and for telecommunications. Eight templates are available now; 15 others will be available by the end of next year, according to the company.

GOOD PLACE TO START

Although Bank of America has a 22-person database marketing department, including eight statisticians, it is still interested in the banking-specific templates. "We will customize anything that Bank of America buys, but a template is a good place to start," said Chris Kelly, vice president and manager of database marketing.

Kelly said the templates will cut deployment and training time. "I like the concept a lot," he added.

Kelly already has experience with HyperParallel. This year, he outsourced a project to the company to score the likelihood of each of 6 million customers' leaving the bank. Using a decision-tree type of algorithm called induction, HyperParallel scored customers every couple of months. Depending on customers' profitability, Bank of America can then decide how much to spend to retain them.

Kelly said the bank has made $4 in profit for every $1 it has spent on customer-retention strategies, though he declined to reveal the cost of the program. He said he outsourced the data-mining portion of the project because in-house statisticians didn't have time to do it.

HyperParallel isn't the only data mining vendor developing niches. Both DataMind and Unica Technologies, Inc. in Lincoln, Mass., target database marketing. Magnify, Inc., based in Chicago, concentrates on fraud. Knowledge Discovery One, Inc. in Austin, Texas, focuses on retailers with its Retail Discovery Suite. And SAS Institute, Inc. in Cary, N.C., announced an alliance last month in which it will write interfaces between its upcoming Enterprise Miner and a marketing campaign management tool called ValEx from Exchange Applications, Inc. in Boston.

Fleet Financial Group, Inc., based in Boston, plans to deploy the Enterprise Miner/ValEx combination. The banking and financial services company will complete installation of ValEx in February. It already uses the current-generation SAS tool and is a beta site for Enterprise Miner.

"The goal is to build a fully integrated marketing promotion and data-mining and analysis environment," said Randall Grossman, senior vice president of customer data management and analysis.

Using the current SAS tool, Grossman's team builds predictive models and scores customers. They then must import the results into ValEx. When the tools are integrated via application programming interfaces next year, this process will be automated.

Grossman has projected a five-year ROI of 138% for a 70-person staff, data warehouse and tools — including online analytic processing, mining and campaign management. The company invested $30 million in the project.

SOME EXPERIENCE NEEDED

However, Grossman, who has an academic background in economics, said he is skeptical about mining vendors' claims that these tools are simple enough for nonstatisticians. He said untrained business users might spend lots of money on marketing campaigns based on misleading correlations uncovered through data mining.

"You can get yourself in a lot of trouble," Grossman said. "I really think it is important to understand the underlying models and variables."

Hill advises clients to evaluate all segments of a mining product — from the algorithms to user interfaces. "You want to make sure the product handles all phases well," he said. Otherwise, getting an ROI will be a frustrating experience. □

Wilson is a freelance writer in Glen Ellyn, Ill.

MCI connects

CONTINUED FROM PAGE 67

keting programs to specific customer groups.

Since launching the data mart strategy in mid-1996, some of MCI's business groups have seen 20% improvements in the quality of sales leads, according to executives. Also, predictive modeling that MCI once farmed out to data analysis vendors can be done in weeks, not months, providing MCI marketers with more timely information to use as they try to sell new products and services.

A BIG INVESTMENT

All of that comes at a price. During the past 18 months, MCI has made a multimillion-dollar investment in data marts and the IBM SP2 massively parallel hardware used to run them, said Dave Johnson, senior manager of MCI warehouse development in Colorado Springs. Analysts place MCI's investments in the high seven-figure range.

Still, when MCI used to outsource data analysis to third-party vendors, it had to put together massive 200-tape extracts to ship to the vendor and then wait months for the vendor to append demographic and lifestyle information to the data sets before obtaining the results.

Now, MCI can quickly append its 2T byte-plus Informix Software, Inc. data warehouse, build a data mart and have its marketing folks pull down data segments for analysis in less than two months, Johnson said.

TREND SPOTTING

If, for example, a prospect has turned down a pitch for a United Air Lines frequent-flier/MCI long-distance program for a fourth time, an MCI marketer can use a data mart to more easily recognize this trend and try a different approach, maybe by offering a Continental Airlines frequent-flier program instead. It would be much harder to make those changes to a data warehouse.

With a data mart, MCI "can modify the hierarchy on frequent-flier programs on the fly," Johnson said. "In the old days, we weren't smart enough to do that."

However, in some respects, working with data marts can be more grueling than data warehouses, Johnson acknowledged. Compared with traditional data warehousing, data marts "are more complex and a little harder to start up," he said. When it builds a data mart, MCI's 45-person warehouse team has to make sure it captures all of the elements for a particular exercise. Otherwise, team members would have to go back to retrieve a missed set of demographics.

Also, MCI has to balance the amount of information users come to expect on a data warehouse and how much it can practically deliver on a data mart. Otherwise, when you load too much data, you end up with "queries you can time with a sundial," Johnson said.

Additionally, the mart strategy allows MCI's end users — in this case, marketing statisticians — to use any variety of hardware, software and query tools they choose, Johnson said. Most MCI marketers tend to use Wilmington, Del.-based MicroStrategy, Inc.'s decision-support software. But other users can launch queries using decision-support systems tools from Brio Technology, Inc. in Mountain View, Calif., and SAS Institute, Inc. in Cary, N.C., Johnson said.

Analysts said a data mart strategy can make more sense than using big, unwieldy data warehouses.

MCI is on the leading edge of other companies that "are moving to specialized data marts, but it's just beginning," said Frank McGuff, president of Tele-Solutions, Inc., a Northbrook, Ill.-based data warehouse consultant. □

Atre: No panaceas

CONTINUED FROM PAGE 67

available. Take inadequate network management capability, or a communications infrastructure unable to handle increased query traffic. Or a lack of resources for remodeling nonrelational legacy data for a warehouse using a relational database. These conditions show an ongoing lack of commitment to enterprise needs — in the very areas in which success is essential for building a full-scale data warehouse.

SHOW THEM THE VALUE

But the lack of commitment may not be the executives' fault. Someone has to show them the business value of technical projects such as data warehouses, which may not be easy to determine or explain.

So, instead of trying to sell top management on an enterprise data warehouse, people often think it is easier to avoid the political and technical barriers and build stand-alone data marts. Data marts cost less initially and may require approval only at the departmental level. The smaller the investment, the less pressure you face to guarantee specific results and benefits up front. You don't need to spend six months or a year in meetings to secure cross-departmental cooperation and compromise. Demands on the infrastructure are kept within bounds.

In deploying stand-alone data marts, the hope is that the company will see the benefit of the data marts and become dependent on them. Then, perhaps, senior executives will make a full financial commitment to data warehousing and pay for an enterprise capability.

NOT WORTH THE RISK

This approach may work. But the risk is that it will ultimately be very expensive to fix scalability problems or reconcile the diverse data models used in the data marts. Who would like to volunteer to tell the senior executives how much it will cost to do everything over again the right way?

You may be able to postpone dealing with some organizational issues by building stand-alone data marts. But it would be better to use data marts only if they really make sense for the business. Resist the temptation to make a "seat-of-the-pants" decision.

The decision to deploy data marts or a data warehouse, or both, should not be made until you have considered the decision-support needs of the business as a whole. Even if you ultimately decide to build data marts, you need to implement them within an enterprise strategy. □

Atre is president of Atre, Inc., a consulting firm in Port Chester, N.Y., that specializes in data warehousing and database technology. She can be reached at shaku@atre.com.

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The WORD from the TOP

They hate expensive, runaway projects. They want to use IT for competitive edge. And they're fed up with CEOs who pass off IT presentations to the CIO. Boards of directors are getting involved in IT decisions

It used to be that even major IT decisions received scant attention from the board of directors. Not any more. *Computerworld's* Allan E. Alter met with executives attending the Wharton Directors' Institute in Pebble Beach, Calif. The three-day program is run by the Wharton School of Business at the University of Pennsylvania in Philadelphia for senior executives and corporate directors. Alter learned that directors are discussing information technology projects and partners, and demanding that general managers get more involved in IT decisions and strategies. The following is an edited version of the hour-long conversation.

CW: Jack, you were the chief information officer and chief financial officer of the Sara Lee Bakery division before being named its president. In which areas are you satisfied you are getting a payoff from IT? And in which areas are you dissatisfied?

Jack Robinson, Sara Lee: We're very pleased with the options we can use to improve key processes. In particular, we've been focusing on how we manage our supply chain. We are not satisfied with our understanding of how the tools can change the way we do business. We wind up using the new tools to do things in the old way, so we don't get the payback as fast as we should. Business managers need to create a set of expectations, so the people who actually use the tools take advantage of their capabilities.

CW: As chief transformation officer, getting people to use technology to create change is something you must think about, Jos.

Jos Stalenhoef, Chiquita: Yes. As far as IT is concerned, my company probably suffered from an overambitious set of targets that didn't really fit our strategy. There were too many people asking for projects, and the information systems organization and individuals were driving the work, rather than the business hats prioritizing the work in line with the business strategy. Who is accountable for the results? In my book, those are the business hats.

CW: Dennis, your search firm recruits both CEOs and board members. Since business managers need to take IT responsibility, do you see companies trying to recruit executives who understand technology?

Dennis Carey, Stuart Spencer: There is enormous interest in recruiting not only CEOs but other executives who understand technology.

I'm sensing discomfort from board members on whether they are getting answers from IS management on the strategic advantages brought by technology and the capital investment costs for obtaining advantage. Board members are extremely uncomfortable about approving major projects without confidence that the management team is technology-literate. They want executives who understand the rapidity of change but also don't buy new software or hardware every other week just to prove that they are up to speed.

Boards are demanding that the CEO get much more technology-literate. Directors want the CEO to stand up and give IT presentations to assure the board that the CEO is directly involved in these decisions. And we are seeing requests for directors with strong technology backgrounds. It was literally unheard of five years ago to recruit a CIO to a board. Now it's becoming very common.

CW: Robert, you sit on four boards. Are you seeing the same board-level interest in IT as Dennis?

Robert Mittelstaedt, Wharton: While I agree about the need to link strategy and IT, my guess is that not 20% of the companies in this country are there yet. I'm amazed at the times I am called in to look at a system that has been in development for five years and is millions of dollars in the hole and still isn't going to work, and they are getting ready to shut it down.

The fact that there hasn't been delivery on IT in about 80% of companies is driving IT to a board-level issue.

Charles White, Unisource: Bob, why do you think we're still seeing that?

Mittelstaedt: There's not enough involvement of the people who have the real business objectives. There's still a big tendency to throw the problem over the wall to the techies and hope that they can figure it out.

CW: Charles, I read that your CFO has been asked to evaluate your company's IT programs. He recently joined your company from Philip Morris and Miller Brewing and had a great deal of IS experience. What is happening at Unisource?

White: Unisource began a project 4-1/2 years ago to create a new enterprisewide information system. We went through all the meetings to determine what the best practices were, and then we selected a software provider.

Last year we had concerns about the cost — not just the investment in developing the system, but the ongoing cost of maintaining, then actually running it. We've spent more than $136 million on this system. We put it in two of our operating divisions, and we've been running them now for a couple of months. We decided to postpone any further investment or rollout in the system until we could quantify exactly the improvements, productivity issues and the real gains that we can expect.

It's like something that creates a life of its own. You have so much invested in it, it just perpetuates itself, until you realize that you had better validate what the productivity is or not invest any further. (Editor's note: White declined to name the vendor or product in question.)

CW: It's clear you all feel technology is now a board-level issue. Could you talk about the role of corporate directors in IT decision making?

Mittelstaedt: On one board, I began asking questions about operational problems that eventually turned out to be IT problems, even though it wasn't obvious that IT was the problem at the outset. It wasn't because people weren't whipping those that worked for them hard enough. It was that people were in some cases doing extraordinary things to keep things together that fundamentally didn't work at a systems level.

The CIO understood the problem but didn't see the support and understanding of the breadth of his problem. Now he's got a clearly different view.

Carey: There are some radical changes over the last couple of years.

Directors are awakening to the investment that's being spent in technology infrastructure. It's the board's fiduciary responsibility to ensure that the company strategically is positioned well, so directors are getting much more concerned about the impact of their investment on strategic advantage. We understand that's difficult to quantify.

CEOs are more on the spot to have cost-benefit analyses and assessments of what your competition is doing in IT. I never heard this three years ago. Now I hear at the board level about all the other competitors, what systems they have, what architecture they have, what their investment structure looks like.

It comes down to: Does the board trust the CEO to have that intuitive sense? It's as simple as that.

CW: Who's going to educate the board?

Carey: We have asked the CEO to immerse himself in these issues.

CW: But can the CIO be the person who educates the board? Or do you think that education has to come from someone else?

Carey: In our case, we specifically get concerned when the CIO is making all the presentations on technology infrastructure.

CW: I see heads nodding everywhere.

Carey: The way some IT vendors are structured today, once you make a commitment, the CEO has to be accountable for what deals are made, what advantages can be had by positioning themselves as a strategic partner. Three years ago, a strategic partnering with technology companies was unheard of. Now there are discussions at the board level. It's not so much a matter of how do we bring the board up to speed in technology but of asking the right questions about the relationships.

Robinson: Management has to understand that how businesses work with people who sell them the technology must change. You're not just buying a piece of hardware or software. You're making decisions that change the business. Top management needs to understand their IT partners and their capabilities. They should have face time with them.

White: People believe that technology is a cure-all for strategic advantage. But the real issue is, how much technology can you afford?

CW: If boards are more involved, and CEOs and CFOs are expected to be more knowledgeable about technology, how does that change the role of the CIO?

Mittelstaedt: Ideally, the CIO should come up with the vision to use the technology and gain the support of board members. It means the CIO has an opportunity to have even more visibility with the board in a forward-thinking company.

Stalenhoef: I think it differs by company. If you talk about banking or Wal-Mart or maybe even Unisource, they are so dependent on the big box. And at that point, the role of the CIO is quite different from a company where they could get by without the big box.

CW: How will the IS organization itself need to change in the future?

White: There can't be a separation between the IT department and the functional business executives.

They need to be very integrated. You can't have people writing code who don't have some understanding of the business process and the business objectives. □

Alter is Computerworld's department editor, Managing.

The Execs

DENNIS C. CAREY, 48
Title: Vice chairman
Organization: Spencer Stuart, U.S.
(Carey is based in Philadelphia; Spencer Stuart is an executive search firm)
Board affiliations:
▸Closure Medical Corp. in Raleigh, N.C.
▸Spencer Stuart, U.S.

CHARLES WHITE, 51
Title: President and chief operating officer
Organization: Unisource Worldwide, Inc. in Exton, Pa.
(Unisource is a $7 billion wholesale distributor of printing paper, packaging materials and sanitary maintenance supplies.)

JOS STALENHOEF, 56
Title: Chief Transformation Officer
Organization: Chiquita Brands International in Cincinnati
(Chiquita is an international maker and distributor of foods.)
Board affiliation:
▸Azar Nut Co. in El Paso, Texas

ROBERT MITTELSTAEDT, 54
Title: Vice dean and director, Aresty Institute of Executive Education
Organization: Wharton School of Business at the University of Pennsylvania
Board affiliations:
▸Laboratory Corporation of America, Inc. in Burlington, N.C. *(clinical lab testing)*
▸A. G. Simpson Automotive, Inc. in Toronto *(auto supplier)*
▸Innovative Solutions and Support, Inc. in Malvern, Pa. *(aircraft instrumentation)*
▸HIP Foundation, Inc. in New York *(parent company of HMO)*

JACK ROBINSON, 43
Title: President, Specialty Markets division
Organization: Sara Lee Bakery in Chicago
Board affiliations:
▸Deluxe Corp. in Shoreview, Minn. *(check printing and electronic payment services)*
▸Chicago Architecture Foundation *(trustee)*

COMPUTERWORLD

A more complete version of the hour-long conversation with the five executives is at our Web site in the Managing section. Visit *www.computerworld.com/news*; look under Features.

CAPABLE and MATURE?

By Gary H. Anthes

Critics of the Software Capability Maturity Model say it still has a way to go to help improve development projects. But advocates say it can be a big boost to software quality — if you use common sense

The Citibank software team broke its back trying to meet an impossible deadline, but still it got no respect.

A project manager had made unreasonable commitments, then left the bank, leaving the project team holding the bag. "They came out of that project black and blue and bloody," recalls Susanne Kelly, a corporate technology vice president. "They realized they never wanted to have to do that again."

The Citibank software group turned to the Software Capability Maturity Model (CMM) as a way to help it avoid such painful projects in the future, and the bank says using the CMM is well worth the considerable effort it takes.

But others say the CMM, the method for assessing the effectiveness of a software development organization, lacks important ingredients, such as how to manage software reuse. They also say the high cost of moving up the CMM ladder has no assured payoff and may, in fact, weaken an organization by making it rigid and bureaucratic.

Yet advocates say the CMM has gotten richer over the years, and indeed a new version of it is in the works with many added features. The key, they say, is that it promotes discipline and offers a road map to improvement — not that it has this or that particular feature.

Users say the CMM can be enormously helpful but is no panacea, nor is it uniquely capable among alternate approaches. Its failings lie more in misuse than in any inherent flaws, they say.

The CMM is a product of the Software Engineering Institute (SEI) in Pittsburgh. It describes the principles and practices that make for effective software development, and it lays out a five-level progression from ad hoc, chaotic processes to mature, disciplined approaches.

"I've been enthusiastic about the CMM all along," says software development expert Edward Yourdon, chairman of Cutter Consortium in Arlington, Mass. But it fails when it's imposed from the top without low-level support, he says.

But there isn't yet a large body of quantitative evidence that it pays off, Yourdon says. "If you tell your management that the CMM is going to slow down your projects for the next couple of years and, by the way, you need $1 million for training and consulting, the obvious response is, 'Where's the proof it's going to pay off?' " he says.

The SEI insists that investments in the CMM do pay off, with companies typically reporting returns of between 500% and 800%. In an SEI survey of 138 companies assessed under the CMM, 84% said the methodology doesn't lead to organizational rigidity, and 96% said it wasn't counterproductive.

UPGRADE

In response to criticism that the CMM is incomplete, the SEI is prepping a new, enhanced version. New or beefed-up topics in Version 2.0 will include subcontract management, risk management, reuse, delivery/installation, requirements elicitation and support for operational systems, says Bill Peterson, an SEI manager.

Even software guru Capers Jones, a long-standing critic of the CMM and the architect of a competing model, now pays it grudging compliments. "While the CMM still has some gaps, it has done more to awaken software managers to the need to improve than anything else I've noted over the past 12 years," says Jones, chairman of Software Productivity Research, Inc. in Burlington, Mass., and developer of the SPR Assessment Method.

The number of CMM assessments performed each year has increased steadily since it was introduced in 1991 — 176 were reported to the SEI last year — and it has grown well beyond its roots in military avionics. About 600 large organizations told the SEI that they use the CMM.

Citibank has assessed 47 of its information systems units under the CMM, half at Level 1 and half at levels 2 through 4. The bank's use of the CMM has led to more rapid testing, cleaner software and less rework. "And you just feel the quality of life," Kelly says. "You feel that you are much more in control."

Best results have been obtained by those groups that really made a commitment to changing behavior, Kelly says. Organizations that view the CMM as just a checklist or a framework for writing procedures will be disappointed, she says.

J. P. Morgan and Co. in New York has adopted the CMM for several its software groups, one of which is now at Level 2. "CMM sped up the commitment to quality at the bank," says Nabil Abdel-Malek, vice president of quality.

The CMM is effective because it supplements and extends an existing quality program. "Without CMM, you have people taking a lot of different approaches to quality," Abdel-Malek says. Asked about alternate assessment frameworks; he says, "It's not the model that's as important as your ability to take a model and create value for your organization."

Northrop Grumman Corp.'s Baltimore-based Electronic Sensors & Systems Division is prepping for a CMM recertification at Level 3. Jess Martak, a senior advisory engineer at Northrop, says of the charge that the CMM "is a framework. It's up to you to use common sense to put in policies that give you flexibility." □

Anthes is Computerworld's senior editor, special reports.

CMM Levels and Characteristics

LEVEL 1 (INITIAL)

Processes are ad hoc and occasionally chaotic. Few processes are defined, and success depends on individual effort and heroics.

LEVEL 2 (REPEATABLE)

Basic project management processes are established to track cost, schedule and functionality. A process discipline is in place to repeat earlier successes on projects with similar applications.

LEVEL 3 (DEFINED)

Management and engineering processes are documented and integrated into a standard software process. Projects use an approved, tailored version of the organization's standard software process.

LEVEL 4 (MANAGED)

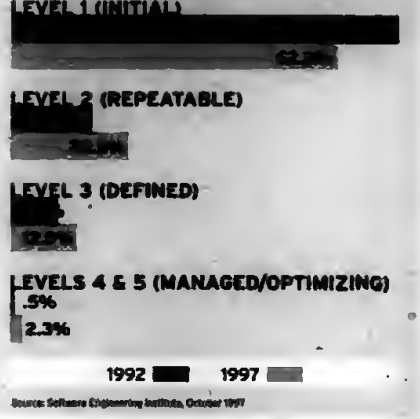
Detailed measures of the software process and product quality are collected. Processes and products are quantitatively understood and controlled.

LEVEL 5 (OPTIMIZING)

Continuous process improvement is aided by quantitative feedback from the process and from piloting innovative ideas and technologies.

Making Progress

Percentage of organizations assessed at various levels of software process maturity. Figures for 1992 are based on 218 organizations; for 1997, 628.



Source: Software Engineering Institute, October 1997

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21. Dir./Mgr. MIS Services Information Center
22. Dir./Mgr. Network Sys. Data/Tele Comm., LAN Mgr./PC Mgr. Tech. Planning, Administrative Services
23. Dir./Mgr. Sys. Development, System Architecture
31. Programming Management, Software Developers
41. Engineering, Scientific, R&D, Tech. Management
60. Sys. Integrators/VARs/Consulting Management

CORPORATE MANAGEMENT
11. President, Owner/Partner, General Mgr.
12. Vice President, Asst. Vice President
13. Treasurer, Controller, Financial Officer

DEPARTMENTAL MANAGEMENT
51. Sales & Mktg. Management
70. Medical, Legal, Accounting Mgmt.

OTHER PROFESSIONAL MANAGEMENT
80. Information Centers/Libraries, Educators, Journalists, Students
90. Other Titled Personnel

3. Do you use, evaluate, specify, recommend, purchase: (Circle all that apply.)

Operating Systems
(a) Solaris (e) Mac OS
(b) NetWare (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTStep

App. Development Products ❑ Yes ❑ No
Networking Products ❑ Yes ❑ No

4. Do you use, evaluate, specify, recommend or approve the purchase of Internet products and/or services?
❑ Yes ❑ No

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70. Mining/Construction/Petroleum/Refining/Agriculture
80. Manufacturer of Computers Computer-Related Systems or Peripherals
85. Systems Integrators, VARs, Computer Service Bureaus, Software Planning & Consulting Services
90. Computer/Peripheral Dealer/Dist./Retailer
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21. Dir./Mgr. MIS Services Information Center
22. Dir./Mgr. Network Sys. Data/Tele Comm., LAN Mgr./PC Mgr. Tech. Planning, Administrative Services
23. Dir./Mgr. Sys. Development, System Architecture
31. Programming Management, Software Developers
41. Engineering, Scientific, R&D, Tech. Management
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(c) OS/2 (g) Windows
(d) Unix (h) NeXTStep

App. Development Products ❑ Yes ❑ No
Networking Products ❑ Yes ❑ No

4. Do you use, evaluate, specify, recommend or approve the purchase of Internet products and/or services?
❑ Yes ❑ No

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ARE YOU READY FOR THE TELECOM WHIRLWIND?

R telecommunications competition is coming, and ill produce better products, more choices and er prices at a much faster rate than in the now o-year-old PC market. Is IS ready? Not in most companies I deal with.

We'll see the same lethargic, delayed awareness of what's happening and the slow, defensive, bewildered response that marked so many IS shops when the PC tsunami hit.

The telecommunications establishment is about as mediocre a collection of companies as you'll find outside Eastern Europe. They haven't produced innovations in products, services or relationships that exploit the thousandfold improvements in every area of telecommunications technology.

Why did the Internet service provider industry grow so fast, with so many start-ups and small entrants? Because the establishment was so slow.

Look at ISDN. It's the late-1970s blueprint for the public networks of 2000, and it's based on the assumption that bandwidth will remain scarce and expensive. It took me four months and about six visits by bewildered local telecommunications technicians to get 128K bit/sec. ISDN installed in my home. Last month, in Sweden, a friend showed me his 384K bit/sec. ISDN line, which gives him full-motion videoconferencing in his home. It cost him $200 for installation, which took just three weeks from order to up and running.

In the corporate market, there's been the same plodding. Virtual private networks are a 1980s development that telcos now offer as "new." If an Internet "year" is three months, as 'netizens claim, a telco year is five years.

Could Robert Allen have survived in the retailing industry? The damage his many misjudgments have done to AT&T, NCR and Olivetti amounts to the gross national product of a small country. NCR, pre-AT&T, was well-positioned to be a major player in the high-end PC/workstation market. In making an alliance with Olivetti, AT&T had the chance to be a world player in the IT market. Its GEO subsidiary's personal digital assistant was impressive — and soon was discontinued. (Mine is probably somewhere in my garage.)

Would you have bought a car from Nynex if it were in the auto business? Would Bill McGowan, the genius of MCI, be proud that the aggressive fighting machine that took on AT&T now looks like AT&T? Can you think of any telco innovation in the past five years to match WebTV, Java or Nokia's beautiful palm-fitting digital cellular telephone that also provides Internet access, E-mail on the go and a fax machine?

PREPARE FOR THE SHIFT

My point here is not to knock the telco establishment but to get *Computerworld* readers thinking about how the industry's destabilization will force IS to make a fast, huge shift.

We (and I include myself) have been able to stay lazy concerning telecommunications. The 1996 Telecommunications Deregulation and Reform Act has left in place a stable establishment for now. So far, IS has enjoyed the price competition but hasn't had to make complex and risky choices or keep up with the technology and product shifts. If you live and think in the world of AT&T, MCI or Bell Atlantic, please get ready for a jolt. Outside the establishment, there's a maelstrom of innovation — and competition — in wireless technology. Web-centered tools, digital media, home nets and wireless laptops; I estimate there's a five-year gap between new competitors and the mainstream, which translates into a three- to seven-year knowledge gap in most IS groups.

Sometime soon, the old guard will be in a true competitive market. Some may adapt. But I'll bet on a new Cisco, Dell or Southwest Airlines being out there somewhere. I'll bet on an LCI — the MCI alumni association that's bringing back McGowan's style and spirit — to do to MCI what Bill did to AT&T. I'll bet on my friend, Tom Brandt, who runs Essential Techworks in Orlando, Fla., whose team of non-graduate beer connoisseurs can set up a T1, T3, Ethernet, Windows NT and TCP/IP net in less than a day — less time than a Baby Bell company takes to tell customers it doesn't know what NT really is.

I won't bet on most IS units being able to understand, welcome, work with or challenge such real telecommunications competitors. I'm afraid in three years, IS organizations will again be stereotyped as bureaucratic, only it will center around private networks and AT&T/MCI, not mainframes and IBM.

That's my bad news. The good news is that just as the best people in IS have welcomed the PC era's world of decision-making and client service, a new style of telecommunications thinking will do the same. It's not a matter of technology, but of attitude. □

Keen can be contacted at peter@peterkeen.com.

f.y.i.

Big retailers bullish on data warehousing

Large retailers nationwide are sold on data warehousing, according to a study by Ernst & Young LLP on 1997 information technology spending from that sector of the economy.

The survey looked at the spending plans of 105 large retailers with average 1996 revenue of $1.6 billion. According to the poll, nearly all of them are building data warehouses to measure customer spending patterns, analyze suppliers' prices and even track whether a specific promotion is profitable.

The survey also found that the retailers planned to spend 32% more this year than last year in capital spending on IT — up to an average of $7.8 million per retailer.

"The surge in spending and in data warehouse development is nothing short of amazing," says Frederick A. Crawford, Ernst & Young's national director of retail and consumer products industry services. "We are witnessing a new era in information technology that is squarely focused on the effective capture and analysis of critical business data."

According to the survey, data warehousing will help retailers in assortment management, or the ability to tailor merchandise to individual store demographics — including customer lifestyle, ethnicity, income level and climate. Such customization remains a critical element of success for most retailers.

Here's what the survey found out about data warehousing:

- Executives at 33% of the retailers said data warehousing has increased their sales.
- 37% of the retailers reported increased gross margins.
- 45% are using data warehousing to develop new strategies.

Among the Ernst & Young's other findings:

- 83% of the retailers plan to add IS personnel during the next two years, with the average department expected to grow from 75 to 86 full-time employees.
- IT operating expenses as a percentage of sales will increase 11% this year (to 0.82% from 0.74%) among companies that also took part in Ernst & Young's 1996 survey. That increase follows a modest 3% hike last year.

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Buyer's Guide

THE *best* CYBERSTORES

BY BETH ROED

It's cold outside, and time is short. You have an entire family tree to shop for, but the last thing you want to do is pull on your gloves and galoshes. Luckily, your keyboard is right in front of you. If purchasing gifts while watching *Seinfeld* and sipping hot chocolate appeals to you, then Internet shopping is for you.

Oh, and if you happen to be on the selling side — trying to make money during the holiday shopping craze — do you wonder what makes an online shopping site a good one?

Computerworld, in collaboration with Internet measurement professionals at Delahaye Group, Inc. in Portsmouth, N.H. (*www.delahaye.com*), set out to rate the best World Wide Web sites to shop according to key criteria such as ease of ordering, quality of product information and navigation. Test shoppers rated each site on a scale from 1 to 5, where 5 represents excellent execution and 1 represents poor execution. Delahaye's panel of test shoppers looked at between five and 10 sites in each of six markets, except for department stores, where there were only three candidates.

All of the top 10 sites share certain traits that make them best in class. Those sites aren't cluttered, they make it easy to find what you need, they offer plenty of opportunity for impulse buying and, best of all, they will do the thinking for you by offering gift suggestions.

TOYS

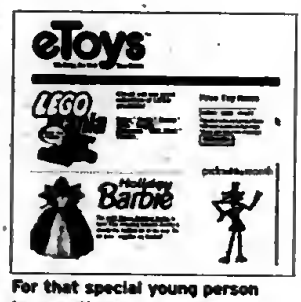
If you are wondering what to get that special young person in your life, try the EToys, Inc. Online Toy Store (*www.etoys.com*), our No. 1 ranked site for toys. The site loads quickly and offers credible gift suggestions and comprehensive product information. Shopping and order confirmation is a breeze, and it is guaranteed safe by Excite's "certified merchant" seal.

For a better selection of mainstream toys, such as *Star Wars*

figures, WebMagic's Toys.com *(www.toys.com)* is a good alternative but slightly more cumbersome to navigate.

Rating

- *www.etoys.com - 4.6*
- *www.toys.com - 4.3*
- *FAO Schwartz (www.faoschwartz.com) - 3.0*



For that special young person in your life, try the EToys Online Toy Store (www.etoys.com)

ELECTRONICS

The clear winner for electronics wares is the Crutchfield New Media LLC Web site. Crutchfield was the first company 20 years ago to sell car stereos via the postal service. The site's "virtual shopping cart" method makes it easy for visitors to pay for their purchases at the visit's end. One negative aspect is the frequent need to use the Back button.

Rating

- *www.crutchfield.com - 4.5*
- *The Wiz (www.nbtw.com) - 3.7*
- *Consumer Direct Online (www.consumer-direct.com) - 3.7*

BOOKS

The winner in the book sector is the now-famous Amazon.com, Inc., the company that pioneered online book browsing and remains the leader today. The site is very easily understood, with a quick and effective search engine, brilliant categories, best-seller lists and myriad gift suggestions.

If it weren't for a cluttered layout and subpar navigation options, Barnes and Noble, Inc. would have been the best of the Web.

Rating

- *www.amazon.com - 4.7*
- *www.barnesandnoble.com - 4.4*
- *BookStacks Unlimited, Inc. (www.bookstacks.com) - 3.8*

COSMETICS

Avon Products, Inc.'s site loads quickly, and navigation is a breeze, with little time wasted locating products. The site — the highest ranked in any shopping category — contains a special holiday gift section and takes security seriously.

Neither of the other cosmetic sites reviewed, Cosmetic Mall and Macy's, came close to matching Avon. Those sites were rather slow to load.

Rating

- *www.avon.com - 4.95*
- *www.macys.com - 3.1*
- *www.cosmeticmall.com - 2.9*

CLOTHES

L. L. Bean, Inc. was slightly ahead of Lands' End, Inc., but both sites offer excellent choices. For the bargain shopper in all of us, Lands' End even offers an overstock list that visitors can subscribe to via E-mail. L. L. Bean has taken a page out of the affinity marketing textbook in that its site lets you create an address book; it also remembers your previous orders.

Rating

- *www.llbean.com - 4.9*
- *www.landsend.com - 4.8*
- *J. Crew (www.jcrew.com) - 4.1*
- *Gap, Inc. (www.gap.com) - 3.8*

DEPARTMENT STORES

Department stores appear to be just testing the waters of electronic commerce; most of the sites we investigated offered a mere fraction of the selection that can be found in their brick-and-mortar stores. JC Penney Co. scored well due to the higher-than-average number of items on its site, and Bloomingdale's offers the best navigation.

Rating

- *Macy's (www.macys.com) - 3.5*
- *www.bloomingdales.com - 3.5*
- *www.jcpenney.com - 3.5*

GARDENING

Garden Escape, Inc. *(www.garden.com)* offers quick navigation, a fantastic directory layout and detailed product information. Its purchasing scheme is quick-and easy, and it offers complete online security. The other two sites reviewed were difficult to navigate and offered limited purchase options.

Rating

- *www.garden.com - 4.7*
- *The Gourmet Gardener (www.gourmetgardener.com) - 2.8.*
- *Bloomsbury Market, Inc. (www.bloomsburymkt.com) - 2.7* □

Roed is director of New Media at Delahaye Group, Inc. in Portsmouth, N.H.

COMPUTERWORLD

Web site managers and analysts offer hints for making your Web site shopper-friendly in Computerworld's online magazine, Enumerati, (www.computerworld.com/enumerati)

If there's a PC on your shopping list, Computerworld's review of online PC shopping sites [CW, Nov. 17] is available at www.computerworld.com/home/online97.nsf/All/971117pcbiz

BROWSERS go HEAD to HEAD

By Chris DeVoney

Microsoft's Internet Explorer 4.0 and Netscape's Communicator Professional 4.0 aren't just for browsing World Wide Web sites anymore. These suites include electronic mail, newsgroup readers, personal conferencing, document sharing, push channels, alternative desktops and even off-line reading of Web sites. And both companies offer tools for configuring and deploying the suites throughout an organization.

After reviewing the latest versions of Internet Explorer Version 4.01, which was released Dec. 3, and Communicator Version 4.0.4, I concluded that the better — but not perfect — suite for most corporate users is Microsoft's Internet Explorer, provided you are using Windows 95 or Windows NT Workstation 4.0.

The browser is more versatile, faster and more powerful than Communicator, and its conferencing and collaboration tools are better.

However, Internet Explorer isn't the best for every corporation. The Explorer versions for the Apple Computer, Inc. Macintosh and Windows 3.1 (late 1997 release) and Unix (early 1998) don't offer the full suite of tools. Also, I can't yet recommend deploying Active Desktop — the close integration of the browser and desktop — because it has too many bugs.

Communicator Professional is the best choice if your top priorities are: full cross-platform support, including support for the Mac, OS/2 and the major versions of Unix in addition to Windows; the best central control of the features of the suite; better Hypertext Markup Language (HTML) authoring tools; full Internet Message Access Protocol mail support; and IBM 3270 terminal emulation.

And given the huge size of each suite (more than 60M bytes) and myriad features, you don't need to install the entire package when only certain pieces are needed. If you need only browsing capabilities, you can get "thin" by deploying only the pieces you need.

BROWSERS: GETTING DYNAMIC

The star of each suite is the browser, the program used for executing Java programs and browsing intranet or Internet sites. Both Internet Explorer and Navigator are worthwhile upgrades to the previous versions. The current versions offer improved user interfaces and handling of dynamic HTML. Both Internet Explorer and Navigator have undergone user interface surgery. For Navigator, tool bars expand and collapse on a mouse click without the user having to dig through configuration options. The menu performance of the 4.0 products is snappier than it was in the 3.0 families.

Internet Explorer, however, one-ups Navigator with its interface. All tool bars are movable, and you can stack multiple tool bars onto the same row. At a push of a button, Internet Explorer enters a dual-pane mode that makes searching and picking out previously visited sites easier. After

Browsers, page 82

PRODUCT REVIEW

OVERALL B+ GRADE

▸ *Microsoft's Internet Explorer 4.01*
Free
MICROSOFT CORP.
(800) 426-9400
www.microsoft.com

OVERALL B GRADE

▸ *Netscape's Communicator Professional 4.04*
$79
NETSCAPE COMMUNICATIONS CORP.
(800) 638-7483
www.netscape.com

BROWSERS

CONTINUED FROM PAGE 81

pressing the Search button, a search dialog box appears in the left window while the selected results or the Web pages appear in the right window.

Both browsers handle HTML better than before, including the recent standard of cascading style sheets. However, Navigator trips over a few elements of Java 1.1, the latest version of the language, which was ratified just as Communicator 4.0 was released. Internet Explorer shows intermittent quirks elsewhere, such as occasionally ignoring mouse clicks on hyperlinks. In most cases, simply restarting Internet Explorer gets its behavior back under control.

In the case of Java, corporations shouldn't be worried about Sun Microsystems, Inc.'s current lawsuit against Microsoft concerning the implementation of Java in Internet Explorer 4.0. The features at the center of the controversy affect Web authors more than end users, and both Web programmers and information systems departments can work around any uniqueness in the browser chosen to be the corporate standard.

The real future is dynamic HTML — Web pages that use active elements without the need for Java applets or plug-ins such as Macromedia, Inc.'s Shockwave. Dynamic HTML covers issues from the two-dimensional positioning of objects on the page, such as moving text or images, to reports whose data is extracted on the spot from a SQL database.

Unfortunately, Netscape and Microsoft have their own, differing versions of this technology. Until the World Wide Web Consortium issues the official dynamic HTML standard early next year, there will be incompatibilities between the Microsoft and Netscape implementations. Again, the problem is more important to Internet Web developers, who must write pages that will work on any browser, than to corporate intranet staffers, who may worry only about the corporation's browser of choice.

In browser performance, the advantage goes to Internet Explorer, which is about 30% faster at executing applets and displaying pages, based on visiting more than 20 widely used Internet sites, including *www.microsoft.com* and *www.netscape.com*, and the CaffeineMark 3.0 Java benchmark from Pendragon Software, Inc. However, unless you are using an Integrated Services Digital Network line or faster, the slow communication rates of dial-up modems negate any browser's speed advantage when simply surfing Web pages.

SNIPPETS

OTHER SUITE FEATURES

Many corporations look at these suites to provide electronic mail, with the newsgroup reader being part of the deal. Microsoft Outlook Express is a better newsgroup and electronic-mail client than Outlook 97. However, Netscape's Messager E-mail is better than either Outlook version in terms of message searches, sending and receiving of mail with HTML text and standards-based return receipts.

For workgroup functions, Microsoft's NetMeeting has the advantage over Netscape's Conference if several people want to share a whiteboard or document or need videoconferencing (which can be decrypted at low communications speeds). Additionally, Microsoft NetShow, which has no counterpart in Communicator, receives audiovisual broadcasts over an intranet — useful for companywide announcements — or the Internet, where you can watch presentations at out-of-town professional conferences without leaving your office.

PUSH UPDATE

Push technology in many ways is just a way of directing which Web pages your browser should automatically retrieve for your later reading. The technology is similar to the early add-ons in which you specify a uniform resource locator (Web site location) to the Web crawler, how many levels deep should pages be retrieved and whether a browser can follow a link to another Web site.

The improvements in what are now called "subscriptions" by Microsoft and "channels" by Netscape is that Internet Explorer or Communicator — plus its Netcaster module — determine, based on hidden Web page tags, which Web pages it should download for your later perusal.

DEPLOYMENT KITS

Customization and management of the browser and its features are the role of the deployment kits: Microsoft's free Internet Explorer 4.0 Administrators Kit and Netscape's Mission Control ($1,295 to $4,500, depending on the number of seats deployed). The kits give IS managers the tools to customize and centrally manage the features and look of each product, including adding or removing channels or locking down the browser from changes.

Neither kit pushes the original product to the desktop, the role of software such as Microsoft's System Management Server. The Explorer kit has a friendlier face, lets managers customize most features and can add additional Web pages or modules (add-ons such as Shockwave or custom ActiveX controls) to the desktops.

Although Mission Control is more complex and difficult to use, the tool offers more extensive control over individual features and components; can push updated modules to the desktop; and can set more individual, workgroup and corporatewide bookmarks, address book and configuration settings than can the Explorer kit. Of the two, Mission Control rates as the better administrator.

ACTIVE DESKTOP AND TOTAL WEB INTEGRATION

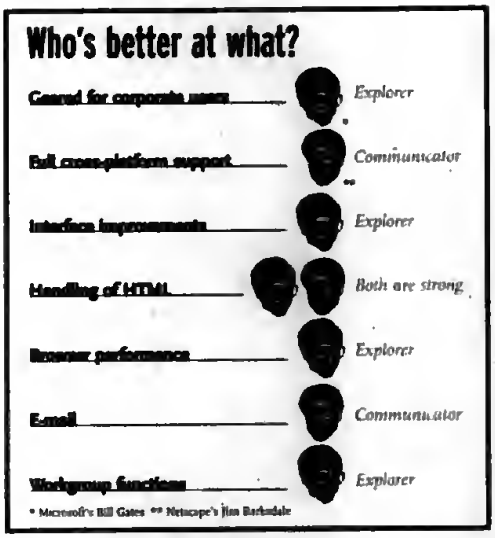
Part of Internet Explorer 4.0's new look is Active Desktop and Total Web Integration, which blurs the line between local and remote resources. For example, when you open a folder, such as a directory or the Control Panel, you get an embedded Web page instead of the regular directory listing. When you select an icon, the Web page changes to give you detailed information on that item.

Internet Explorer 4.0 can also replace the static wallpaper with embedded browser controls.

Additionally, the browser can execute scripts to automatically launch programs or control the computer.

The problem is that Active Desktop has a few bugs and not every worker wants (or needs) a browser that doubles as a desktop.

Also, you can't uninstall Active Desktop without removing Internet Explorer 4.0. Because of the current problems, either test Active Desktop thoroughly with all of your organization's applications before deploying or just don't install Active Desktop yet.



You may be better off waiting several months for Microsoft to flush out the problems or waiting until Windows 98 and Windows NT 5.0 appear formally, because they should incorporate a more resilient form of Active Desktop.

Given both companies' track records, the improvements are continuous. The recently posted Communicator 4.0.4 incorporated several minor changes for federal government E-mail use, some useful performance tweaks and modest bug fixes over its earlier versions.

The new Internet Explorer 4.01 version, available only for Windows 95 and NT 4.0, incorporated the three security fixes issued by Microsoft, resolved the installation problems on some Compaq Computer Corp. Presario computers and added new accessibility options designed for users who rely on software that reads on-screen text aloud.

If you already have Internet Explorer 4.0 and the security patches, don't bother downloading 4.01, whose only on-screen notice is its version number (4.72.2106.8) located under the Help menu, unless you've run into the listed problems.

Expect more incremental releases from either vendor if security breaches are discovered. Regardless, corporations should continue to enjoy the results of this Microsoft/Netscape rivalry as the two are forced to aggressively produce the best browser suite the market will accept. □

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In Depth

GADGETS 'R' US

In-house technology evangelists can lead their companies to IT heaven. But their raw enthusiasm and user focus can make them a helluva handful for IS

Du Pont's David Pensak: 'If I'd spend money out of my own pocket for [technology], it's cool. If I wouldn't . . . it's not cool.'

JAMES WASSERMAN

BY GARY H. ANTHES

"I can't believe they pay me to do this."
— *David Pensak*

"I'm here to have fun."
— *Mickey McIntire*

"This is very exciting stuff."
— *Brent Lowensohn*

"Since I was 11, this has been my thing."
— *Randy Kaplan*

What these people have in common — other than an enthusiasm for their jobs bordering on mania — is responsibility for finding the latest and greatest information technology and putting it in the hands of users.

They are technology evangelists. They are risk takers. They are leaders. They have a knack for keeping one eye on the frontiers of technology and the other on the day-to-day business needs of their companies.

But despite these similarities, the styles and methods of technology evangelists vary to a remarkable degree. Some are aggressive, even confrontational, while some are more like gentle mentors. Some work inside information systems organizations, some support IS from an outside research group, and some even end up as IS rivals and adversaries.

The IS manager thinking about sponsoring or hiring a technology evangelist should know they tend to be bright, enthusiastic and user-oriented. But they can also resemble gadflies and loose cannons.

'TRUFFLES'

"You know how French farmers harvest truffles?" asks David Pensak, a senior research fellow at Du Pont Co. "I see my job as identifying technology truffles. We wash them, slice them and dice them, put them out on a plate with whatever garnishes we have, and people say, 'Wow, how did I ever live without that?' "

Not long ago, Pensak bought several desktop scanners and gave one to his boss, who directs all research at the Wilmington, Del.-based chemical company. "He loves to try out new techno-gadgets, and he absolutely adored it," Pensak says. "He comes in on weekends and scans and organizes his own information."

Pensak's boss was so enthusiastic, he bought scanners for other members of his staff. "We are now buying them by the dump truck load," Pensak says.

Pensak, 49, says he often brings in techno-truffles with little idea how they might be used. "So how do I define what's cool? If I'd spend money out of my own pocket for it, it's cool. If I wouldn't spend my own money, it's not cool."

Brent Lowensohn is Pensak's counterpart at Kaiser Foundation Health Plan, Inc. in Pasadena, Calif. "There are some jobs you shouldn't do if you can help it, and I guess

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GADGETS 'R' US

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this is one of them," he jokes. Although he loves the work — he's had the job 19 years — it has its share of risks and frustrations, he says.

Lowensohn, manager of research and development for information technology, says users resist the disruption brought on by rapidly changing technology. "There are a lot of people who don't respond well to change," he says. "You take a lot of hits."

But the wins make it worthwhile. Lowensohn brought in PCs and a LAN more than 15 years ago, when it was still very much a mainframe world. "People couldn't figure out why in the world we'd want to do such a thing," he recalls. "They said microcomputers certainly would never be powerful enough to do anything."

But then Lowensohn's group introduced Visicalc, and the time required to prepare corporate budgets plummeted. "Suddenly, you saw microcomputers pop up on everyone's desk, and it was very exciting to see you were making a difference," he says.

'SKUNKWORKS'

"We are like a skunkworks," Lowensohn explains. "We never say no. We go into [vendors'] labs and say, 'I need this. Give it to me now.' We get things from vendors that others don't even know exist."

"Brent's the college professor," says Dr. Gary Lulejian, area associate medical director at Baldwin Park Medical Center in Baldwin Park, Calif. "He's got piles and piles of stuff in his office. I went in one day and asked him if he knew about smart cards. And he pulled open his desk drawer, and he had about 10 of them in there. He said, 'Yeah, what kind do you want to talk about?' "

Lowensohn, "approaching 50 years" old, is a manager two levels down in an IS group whose budget exceeds $2 billion per year. He says it's important to entice, not push, users into new technology. "We may just quietly put something up, and when people say, 'Gee, that's neat, why didn't you give that to me?' we'll say, 'OK, you can steal it from us.' "

Corporate Software & Technology's Mickey McIntire, a vice president and "technical evangelist," acknowledges that he isn't always so subtle. "I'm willing to kick over a few bar stools if I have to," he says. "I won't avoid a fight, even if I'm told by the CEO at a meeting to sit down and shut up."

That happened. It seems the CEO wanted to bring in a certain product to support Internet commerce, and he even wanted to partner with the product's vendor. But McIntire says he felt it wasn't a good choice. "We had six meetings on that product before we finally killed the damn thing," he says.

"That kind of thing has happened with Mickey and me a dozen times," says CEO Howard Diamond. "He'll tell you when you are totally full of s---. That's part of his style."

"I'm a geek from way back, but the politically correct term is 'technology-advantaged individual,' " says McIntire, 39. Part of his job is to filter out the half-baked ideas of the technology-disadvantaged. "I've always thought we could solve a lot of problems if we didn't let managers read PC magazines," he says.

AXIOMS

Responsibility for technology evangelism at Philadelphia-based PECO Energy Co. is shared by two people. Randy Kaplan, director of information technology architecture, finds new technology, and Joseph Awe, director of IT services, figures out how to deliver it cost-effectively to users.

"I have two key axioms," Awe says. "If you can buy it, it's obsolete. And the future's already here. It's just not evenly distributed."

Awe says he tried to get the utility's IS managers interested in intranets in 1995, without much success. He had a vision for how intranets could help the company, but there wasn't yet a "fertile ground" for the technology at PECO, he says.

"So in 1996, I took all the IT managers to visit our major suppliers — Novell, Microsoft, Intel, Oracle, Octel — and they told us of their plans for intranet. We called that 'the trip to Mecca,' and it helped generate that fertile dirt," Awe says.

Pensak is well-respected among users — Du Pont scientists — where he makes his home, but the IS organization is another matter entirely. "The CIO refers to me as 'the information systems anti-Christ,' " he says. The problem is that Pensak's new "techno-toys" sometimes catch on to the point that his group of eight can no longer support them, so users turn to IS.

"Sometimes IS says, 'We don't care how good you think it is, we don't have the resources to support it widespread throughout the corporation. Don't tell anybody about it,' " Pensak says.

But some of Pensak's ideas catch on big-time. His group began experimenting with World Wide Web technology in 1992 when it was just a European research project and no browsers existed. Du Pont's intranet, which grew out of that pioneering work, now runs on 100 servers and is used by more than 10,000 employees.

Indeed, good rapport with users seems a hallmark of the technology evangelist. Mitch Rutledge, administrator of vision services at Southern California Permanente Medical Group, says of Lowensohn, "He'll catch you in the hall and talk to you for five minutes, and during that time he picks your brain about what you're doing so he understands your business needs."

PECO's Kaplan says users wishing to sponsor new technologies sometimes have good ideas, or "pearls," and sometimes not-so-good ones, or "non-pearls."

It's sometimes hard to explain to users that they have found a non-pearl, but it's important to limit the number of nonstandard products brought into the company, Kaplan says. "A constant challenge is, if you don't build it, they will," he says.

"Part of our job is to keep clients attached to reality," he adds. "Clients tend to think technology is free."

But, Kaplan says, "it's a wonderful challenge, and we like working with gadgets."

"Gadgets are us," Awe agrees. "We are avid seekers. □

PECO Energy's Joe Awe: "The future's already here. It's just not evenly distributed."

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IT Careers

ELECTRONIC FRONTIERS

There are outstanding job opportunities in electronic commerce for IS pros with strong skills, breadth of experience and a bit of attitude

By Rochelle Garner

American Greetings' John Watson is a model for IS professionals. He understands that with electronic commerce, work may never be finished.

Practitioners: A project manager's tale

In a field where it's hard to find talented information systems professionals, John Watson just might be the perfect role model. Articulate and grounded in the ways of business, he's risen through the IS ranks to become a project manager in American Greetings Corp.'s electronic-marketing department in Cleveland. How did he get there?

"I've always been an early adopter of technology," Watson says. "I worked my way up from evaluating Micro Focus Cobol on a PC about 10 years ago to client/server and the Internet and electronic commerce by getting on projects that were the 'buzz' technologies of the time. This business takes a person who's not afraid of jumping in and learning new things on his own."

In fact, that attribute — being able to learn new languages and technologies without formal training — has become a mantra of sorts among electronic-commerce managers. Small wonder then, that Watson was the first IS professional tapped two years ago for the company's electronic-commerce organization.

Today, one of his responsibilities is finding people just like him. The mirror for his reflection: a resume crammed with multiple technologies, outside activities and an abiding interest in the PC.

"I started out as a hobbyist — buying an IBM PC when it first came out," Watson says, describing his passion.

Watson's 10-hour workdays also offer insight into the demands electronic commerce places on an IS professional. During a typical day, he talks to internal customers and visits with external customers at America Online, Inc. and The Microsoft Network. He works alongside marketing, sales, legal and corporate communications people. He rolls up his sleeves to help IS deliver rapid-fire projects in the requisite two to three months. And he constantly evaluates new ideas, with an eye toward feasibility and return on investment (ROI).

"Our marketing people come up with an idea almost every day, and those ideas have to be analyzed very quickly to understand the scope of each," Watson says. "Is it a one-week idea or a six-month idea? Can it be delivered? And it all has to apply to ROI, in that it could be a really good idea, but not worth six months out of three people's workdays."

And best of all, Watson accepts the fact that, with electronic-commerce, work may never be finished.

"This environment is so competitive that concepts and projects constantly change. People not only have to design for flexibility, they also have to be flexible themselves. All of the IS people here realize that there's no right way of doing anything, but a lot of good ways. It's our job to identify those multiple good ways and select the best way to go," Watson says.

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ELECTRONIC FRONTIERS

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"Projects that previously would have been handled by marketing folks are best handled by people grounded in technology – but with a strong understanding of what the consumer needs and wants."

– Josef Mandelbaum, American Greetings

Job seekers: A study in contradictions

You can say this for electronic commerce: It's created the biggest set of contradictions ever to confound the IS landscape. On one hand, companies are desperate to find qualified information technology professionals to staff their new business-generating efforts. On the other, IS people are almost as desperate to work with the hottest technologies to have come along in years. So why are companies having so much trouble finding qualified people to fill these jobs?

It's all in the day's work. Forget how things are done in the rest of the company. Electronic-commerce organizations generally operate as companies within a company. That means nearly constant interaction among people in sales, legal, marketing, IT and communications. It also means long hours that can burn out those not lit by an internal passion and IT understanding, combined with a creativity borne of marketing acumen.

How are companies supposed to find IS professionals who can thrive under those conditions? Word of mouth, mostly. The problem is knowing whom to look for. Sure, experience is key. But experience is relative when even the most avant-garde businesses have been exploiting the World Wide Web for only three years.

"It helps to have a diversified background," says David Young, electronic-group manager at United Parcel Service of America, Inc. in Atlanta. "We look for people with a lot of experience with Internet projects or with communication systems. And we look for people who have worked with both business systems and IS, so they understand how the IS life cycle works and what the business community wants and why. We absolutely look for breadth."

The kinds of breadth companies seek may surprise you. Because even though these businesses are dealing with the latest distributed technologies, it turns out that legacy experience is a decided plus. The reason: It develops analytical skills.

"It can also help to have an MBA," says Josef Mandelbaum, director of electronic marketing at American Greetings. That's because marketing drives nearly all electronic-commerce efforts.

But there's a paradox: People also have to know the technology well enough to know what it can and can't do. "That means projects that previously would have been handled by marketing folks are best handled by people grounded in technology — but with a strong understanding of what the consumer needs and wants," Mandelbaum says. "This business is a quagmire of contradictions, and you can't be rigid if you want to survive."

Consultants: The skills that cut the mustard

Even high-paying consulting companies are having trouble finding professionals adept at surfing the new wave of electronic commerce. But that doesn't mean those firms aren't being picky. To find out the extent of their scrutiny, *Computerworld* asked Ken Smith, director of consulting services at US Web Corp. in Santa Clara, Calif., for a few answers.

CW: What do you look for in a candidate for US Web?

SMITH: We have a rather intricate matrix of skills, one fifth of which is technology. I also look for people with teaching skills, since consultants often need to present information that is new to a large audience. I look for people with very sound academic skills, preferably an advanced degree. After all, a lot of consulting is academic-style research, so it helps to have the background of creating a hypothesis, seeking third-party materials, reading, digesting, writing, rewriting and editing. If you don't have a thesis, I want to see somebody who has written a lot.

CW: Do you hold much weight with the resume, or is the interview the more important first cut in deciding whom to hire?

SMITH: They are both important gating items, but they are barely the first step in the gating process. I don't look at a resume's content. I look for errors. If I find any, your resume goes right into the five-year file that by law I have to keep. With the interview, I want to see how you dress and how you cut your hair. I want to see how you present yourself.

Beyond that, we get into testing. For consultants, I want to see a sample of your writing of greater than 150 pages. And I want to see a demonstration of performance: Don't tell me you've done stuff — show me. Bring me the binder for the project you worked on, and I want to see that your name is on the top. Back-office IT folks? I sit them in front of a computer and tell them they have 30 minutes to produce an assignment. If they can't do it in 30 minutes, I don't want them.

CW: Is there any one thing to which you give greater weight?

SMITH: I would say two things: Flexibility, which to me means that they have learned to learn. And the ability to communicate with brevity and clarity of thought. I weed out a lot of people by their ability to write an executive summary.

Recruiters: How to get them excited

Three IS recruiters, three different perspectives. How different? Kris Sorrentino, an account manager at Winter, Wyman Contract Services in Waltham, Mass., fills the electronic-commerce void through contract employees. Chuck Muller, principal IS recruiter at AJM Professional Services in Troy, Mich., helps clients find permanent employees. And Janice Litvin, owner of Micro Search in Walnut Creek, Calif., focuses on filling the IS needs of Silicon Valley businesses.

CW: How do you find the people your clients so desperately crave?

SORRENTINO: We advertise on the Internet, and that's proved to be a tremendous help for finding people. Plus, our company's growing, and we're hearing a lot of word-of-mouth referrals.

MULLER: We don't do much advertising here, so we find people primarily through direct recruiting. That means going to people we know and asking them for leads. We've also looked at Web pages and sent messages to the webmaster.

LITVIN: We find people every way you can imagine — the Web and word of mouth. The main thing is we cold-call people in companies and ask if they would be interested in talking later that evening. Companies out here know who their competitors are, and they use recruiters to cherry-pick the best from each other.

CW: Are companies reporting special needs for electronic commerce that make candidates even harder to find?

SORRENTINO: Everyone's looking for experience with Java and C and C++ development. And everyone's looking for a quick learner and people who have good communication skills.

MULLER: We hear a lot of requests for Java technology, but companies typically want to hire someone who's already done it in the business world. The best thing people can do, if their company is offering that kind of experience, is to try to get into that position for six months or so, then try to move.

LITVIN: Web technologies or C++, of course, but I don't find that particularly difficult to find. One real big issue is firewalls and security, plus understanding back-end databases.

CW: What sorts of things do you look for on a resume?

SORRENTINO: We look at their work history, to see what different environments they have worked in and what they have accomplished. We also look to see how long they have worked at each job and what experience has been gained.

MULLER: I look for accomplishments. A lot of people put in stuff like, "My responsibilities were programming, blah blah blah." But that passive stuff just doesn't cut it. I want to see a resume that's action-oriented, that gets away from a daily job description and into what you actually accomplished — like managed a project that resulted in $5 million in sales. And I look at a resume to see how well that person writes.

LITVIN: I ask them what projects they worked on and ask them to tell me, step-by-step, how they got where they are. Half of hiring is knowing how that person is going to fit in. I try to get a gut feeling for what motivates people and whether they can speak intelligibly to management. □

Garner is a freelance writer in San Carlos, Calif.

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The Kansas Department of Transportation has an opening in the Bureau of Computer Services located in Topeka for a Manager of Applications Programming. Minimum qualifications are education and or experience in equal three years (PZ000, PLS) in applications programming, systems analysis on database design and three years supervisory experience (GM002, PLS). Will be responsible for 28 programmer/analysts supplemented with consultant support. Prefer management experience in COBOL, C/S Oracle RDBMS and development tools, M/F DB2, GIS, CYDD, SAS, and CICS. SALARY COMMENSURATE WITH EXPERIENCE.

DATA CENTER MANAGER

The Kansas Department of Transportation has an opening in the Bureau of Computer Services located in Topeka for a Manager of Technical Support. Minimum qualifications are experience in equal three years (PZ700, PLS) in data control operations and/or education to equal three years in computer science or data processing and three years supervisory experience (GM002, PLS). Will be responsible for 25 technical support personnel supplemented with consultant support. Prefer management experience in Novell LAN, Microsoft NT servers and workstations, telephony, PC/workstation support, Oracle and IBM DBA, wide area networks, Groupwise, and IVE. Will support statewide network of 1000 workstations at 50 locations. SALARY COMMENSURATE WITH EXPERIENCE. MUST COMPLETE REGISTRATION FOR EMPLOYMENT (DA 214) PART A & B AND AN APPLICATION FOR CONSIDERATION. SEND COMPLETED APPLICATION AND REGISTRATION TO KDOT PERSONNEL OFFICE, 7TH FLOOR, DOCKING STATE OFFICE BUILDING, TOPEKA, KS 66612. POSITION OPEN UNTIL FILLED. KDOT applications and Registration for Employment are available at the KDOT Personnel Office in Topeka, local KDOT offices or call (785) 296-3721. EOE/AA. If you are in need of an accommodation to participate in the employment process, please contact the Bureau of Personnel Services. (785) 296-3585 (Voice/TTY)

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Sr Sftwre Eng analyze, design, and develop client server bus. applications using C++ and Oracle under MS Windows and Unix. Develop automated test-scripts using MS-Test. Requires B.S. in C.S. and 3 yrs. exp. as sftwre eng. designing/developing client-server bus. applications in C++ and Oracle under Windows, w/ at least 2 years object oriented analysis and design. Must have demonstrated knowledge of Unix and Relational Database Management Systems (RDBMS). 40+/wk, $66,000/yr. Must be US citizen, permanent or temporary resident, refugee or asylee. Applicants should submit two resumes to: Case # 71576 P.O. Box 8998, Boston, MA 02114.

Computer Programmer/ Analyst

Public employee union seeking applicants. Albany, New York location. Duties include both computer programming and analytical work in applying EDP methods to solve business problems and address business initiatives. In addition to technical skills, must be a business professional, able to communicate both verbally and in writing, and must be a real problem-solver. COBOL programming is a requisite. Digital Equipment Corp background a real plus. IBM background helpful. Individuals with Aces Financials or Cyborg Human Resource system backgrounds are encouraged to apply.

Minimum qualifications: Associates degree in data processing/computer science plus 2 years of progressive programming and minimum of 6 months systems analysis work, or 4 years of progressive programming with minimum of 6 months systems analysis work. Salary: $39,500.

Submit letter of introduction and resume to: Director of Human Resources, PO Box 7125, Capital Station, Albany, NY 12224. Serious applicants only. Respond immediately.

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Programmer/Analyst (Client site in Jacksonville, FL, subsequent placements throughout FL) Analyze, design, develop, code, implement, test, and maintain commercial and financial applications using COBOL and CICS in an IBM mainframe environment. Bachelor's Degree in Comp. Sci., Englin., or Math, + 1 yr exp. req., or will accept 3 yrs. exp. in lieu of Bachelor's degree and 1 yr. exp. $37,000/yr; 40 hrs/wk; 8:30 a.m.-5 p.m. Send resume to: FDLES Bureau of Operations, 1320 Executive Center Dr., Ste. 110, Tallahassee, FL 32399-0657, Re: JO# FL-1707162.

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Required qualifications include a 4 year degree in related discipline or equivalent professional experience and 5 years experience in programming and system analysis. Good analytical and communication skills required. Experience in any of the following areas is desirable: SAP ABAP programming language, EDI programming or Sterling Gentran EDI software, modular programming in structured programming language.

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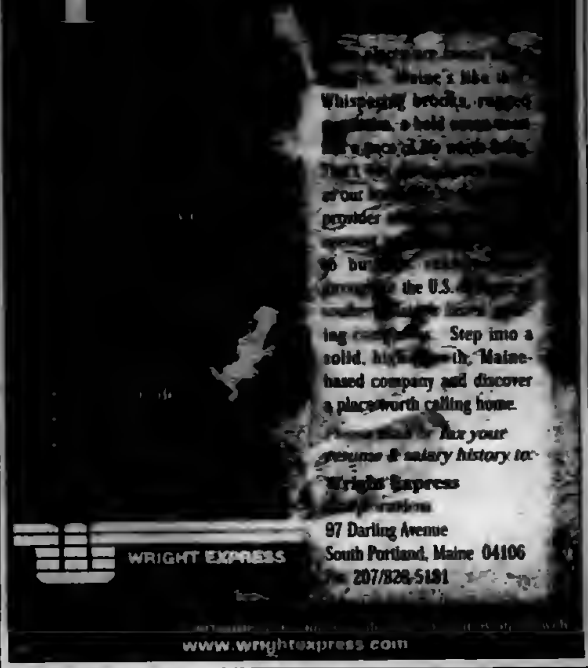

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Additional Professional Experience: In addition to meeting the basic requirements listed in the vacancy announcement, applicants must also have one year specialized experience equivalent to at least the next lower grade (GS-12 or ZP-III). Specialized experience is development of analytic queueing theory and statistical design-of-experiments models and tools for the measurement and characterization of parallel and distributed computer performance. This requires knowledge of methods and techniques for collecting and analyzing performance data, proficiency with multiple programming languages and multiple scripting languages; familiarity with message passing environments, such as PVM and MPI; knowledge of compiler theory; skilled in system software, and their nuances on various architectural platforms; experienced in the design and implementation of graphical and parallel programs;

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STRANGERS in PAR

By Amy Malloy

The beauty and the beaches would lure any IS pro to relocate. But recruiters say you may sever ties with family and friends

Maybe you get a call from a recruiter describing your dream job. It's challenging, financially rewarding and perfectly matches your skills set. The dilemma: The job is in South Florida, and you've spent the past 10 years in Nebraska with your spouse and children.

Or you may have just survived another brutal winter in the Northeast, and you want to go somewhere warm before the onset of next winter's bone-chilling storms. Naturally, the Caribbean and Florida both come to mind.

In either case, you are now considering a move. A big move. The smart thing to do before uprooting is to meet with prospective employers and get a taste of the lifestyle. You will probably hook up with a company or recruiter who will try to sell you on the area. And the sell can be pretty enticing. After all, we're talking about two popular, paradise-like vacation spots.

To illustrate how the process works, The Resource Group, Inc. (TRG), a Fort Lauderdale recruitment company, laid out its standard agenda for information systems professionals who want to sample the market.

On Thursday, TRG flies you into the Fort Lauderdale airport and hooks you up with a car and a hotel room on Fort Lauderdale Beach. The next day, you meet with TRG for breakfast to prepare for your client interviews. Following a day of interviews, you attend a social hour with other IS professionals, go to dinner and experience the nightlife. On Saturday, you get your choice of golfing, boating or scuba diving. The next day, you tour South Florida neighborhoods before you head back home.

Office Depot, Inc., a major employer in Delray Beach, Fla., sometimes will fly a potential recruit's entire family to the area. The company will introduce candidates to staff members' families in hopes of easing the transition and facilitating the exchange of information, says Chief Information Officer Bill Seltzer.

SALARIES IN SOUTH FLORIDA

JOB TITLE	TOTAL COMPENSATION
Chief information officer	$123,000
Director of systems development	$73,000
Director of networks	$72,000
Project manager	$65,000
Manager of voice/data communications	$65,000
Computer operations manager	$62,000
Database manager	$60,000
Systems analyst	$55,000
Senior systems programmer	$54,000
Webmaster/Web designer	$50,000
Systems programmer	$50,000

Source: Computerworld's 1997 Annual Salary Survey

First Data Merchant Services in Sunrise, Fla., will allow employees working in other parts of the country to put in a request to try working in South Florida. If they like it, they may move there.

The selling points

In many respects, Florida sells itself. But it is worth looking at some specifics before making the move. Some of the area's stronger appeals include no state income tax, no winter utility costs, warm weather and low cost of living, says Iris Levenberg, senior vice president of IT staffing solutions at Steven Douglas Associates in Weston, Fla.

According to the American Chamber of Commerce Research Association index, Miami and West Palm Beach have a lower cost of living than metropolitan areas such as Washington and New York.

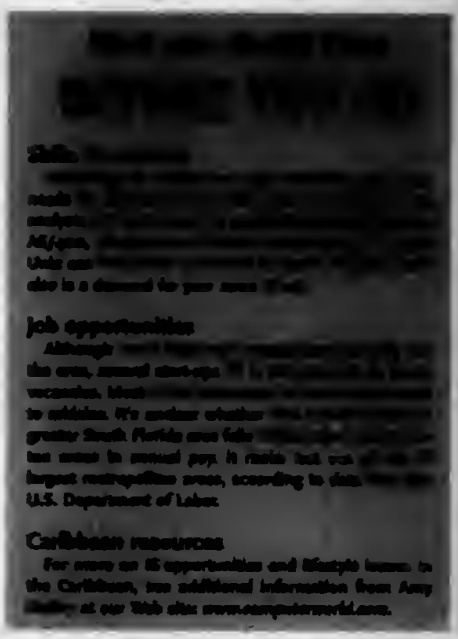
However, you still get the nightlife, cultural and sporting events, and the shopping and dining associated with a metropolitan area. Plus, you get pure blue oceans and clean, expansive beaches.

When selling the area, employers often need to tell people that it's a myth that South Florida is a retirement community with no productivity and a low work ethic. "That is 180% wrong," says Bob Conklin, senior vice president of MIS operations at Office Depot. It's a vibrant community and a great place to live and work, he says.

The IS culture is no different between South Florida and Melville, N.Y., where Pete Cavicchi, vice president of applications development at First Data spent the first part of his career. Florida just offers better weather, he says.

The area also is rich with IS jobs.

"Companies are attracted by the cost of living and the connection to the Caribbean and Latin American regions," Levenberg says. South Florida firms often have offices in the Caribbean, so there is demand for bilingual or even trilingual IS talent willing to work there, she says. □



Malloy is Computerworld's associate editor, Buyer's Guide.

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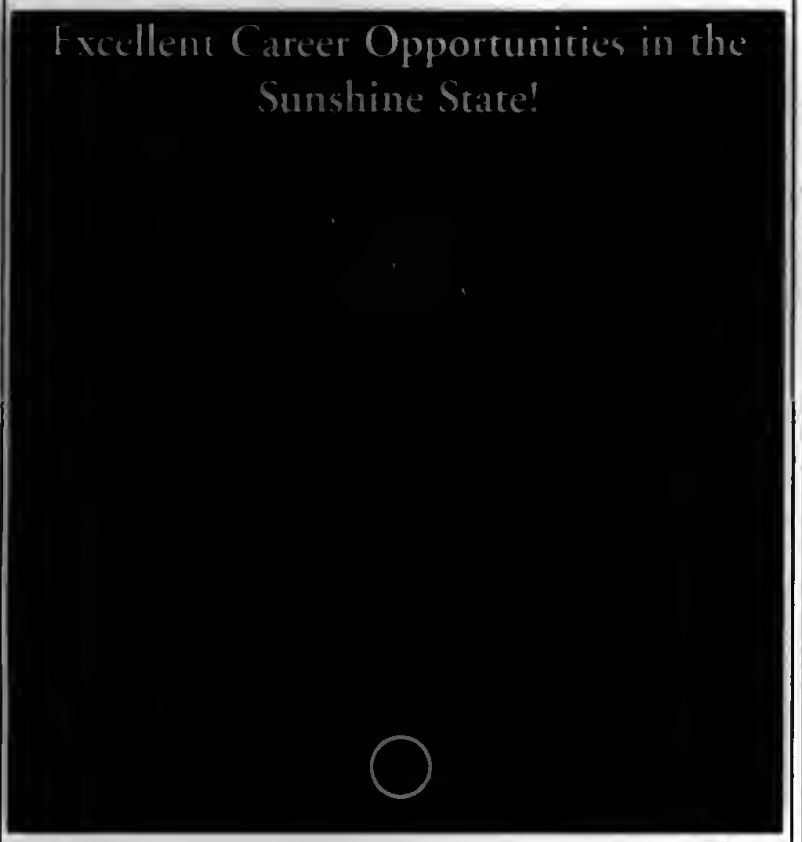

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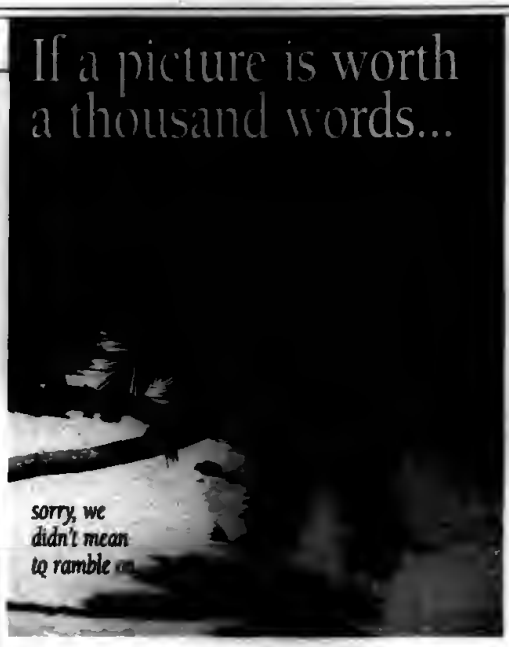

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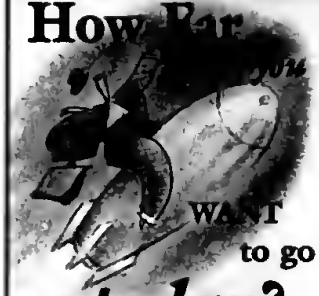

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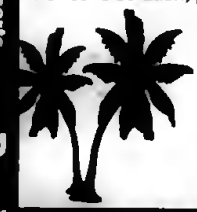

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- Experience w/ managing large projects (3,000+ hours) a must
- At least 5 years of Information Systems experience and 2 years of Project Management/Team Leader experience
- Knowledge of IDMS, COBOL, JCL and VSAM technologies and applications
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- Experience developing work plans and estimating work effort
- An MBA, CPA and a knowledge of retail or restaurant industry is a plus

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- Develop detailed project task estimate

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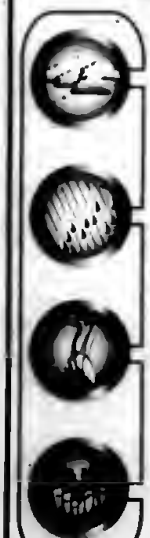

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Software engineer with 3 years of experience as a s/w engineer or computer professional, who will develop s/w systems, applying computer science, engineering, and mathematical analysis, with 3 years of experience using UNIX, SQL*Forms, SQL*Reports, PL/SQL and Pro*C and at least one year of experience with SQL*Plus and Oracle Financials. Analyzes s/w reqs. and performs testing and user training after development. Extensive travel and frequent relocation. Bachelor's degree in one of several limited fields: engineering, mathematics, computer science or physics. $70,000/yr. 40 hours/wk., 9:00 am - 5:00 pm. Send resumes, listing job order number 9076587, to: Ms. Charlene Cagley, Manager, Beaver Falls Job Center, 2103 Ninth Ave., Beaver Falls, PA 15010.

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Software engineer to design, develop and end computer programs for business applications; analyze software requirements to determine feasibility of design, direct software system testing procedures using expertise in DB2, CICS, VS Cobol II, and Expeditor. Requirements: Bachelor's Degree in engineering, computer science or related field, two years experience as software engineer or computer programmer, and knowledge of DB2, CICS, VS Cobol II, and Expeditor. Salary: $45,000/year. Working Conditions: 8:00 a.m. to 5:00 p.m., 40 hours/week. Apply: Pa. Job Center, 2100 Wharton Street, Pittsburgh, PA 15203. Job No. 5015423.

Software engineer to design, develop and end computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in Progress 8.0, Progress 4GL, C, Oracle and Forms 3.0. Requirements: Bachelor's Degree in computer science or related field, three years experience as software engineer or computer programmer, and knowledge of Progress 8.0, Progress 4GL, C, Oracle and Forms 3.0. Salary: $46,000/year. Working Conditions: 8:00 a.m. to 5:00 p.m., 40 hours/week. Apply: Pa. Job Center, 32 Iowa Street, Uniontown, PA 15401. Job No. 2015463.

Software engineer with 2 years of experience as a s/w engineer or computer professional, who will develop s/w systems, applying computer science, engineering, and mathematical analyses, with 2 years of experience using Powerbuilder, Sybase and SQL Server. Analyzes s/w reqs. and performs testing and user training after development. Extensive travel and frequent relocation. Bachelor's degree in one of several limited fields: engineering, mathematics, computer science or physics. $65,000/yr. 40 hours/wk., 9:00 am - 5:00 pm. Send resumes, listing job order number 7030758, to: Mr. Clement Pizzutelli, Manager, Connellsville Job Center, 1051 Morgan, Box 868, Connellsville, PA 15425.

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Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in DB2, CICS, VS Cobol II, and Expeditor. Requirements: Bachelor's Degree in computer science or related field, two years experience as software engineer or computer programmer, and knowledge of DB2, CICS, VS Cobol II, and Expeditor. Salary: $45,000/year. Working Conditions: 8:00 a.m. to 5:00 p.m., 40 hours/week. Apply: Pa. Job Center, 3 Kensington Square, New Kensington, PA 15068. Job No. 5015418.

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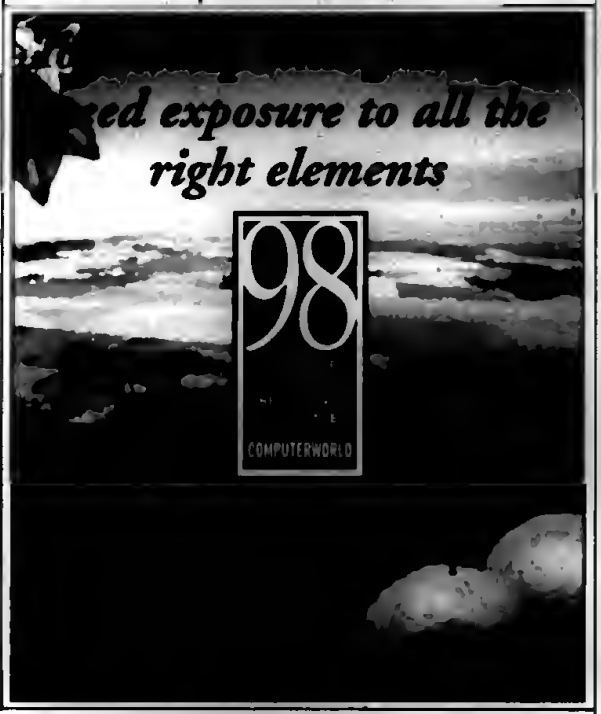

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PROGRAMMER ANALYST - Analyze business reqs, design, code, test & implement software apps using Visual-Basic, MS Access & Win API M-F, 8AM-5PM, 40 hrs/wk, $56,000/yr. Req. Bach in Comp. Sci. (Informatics), Electronics, any Engr or Math degree and 2 yrs exp. Employer is a consulting company. Relocation required for assignments varying bet. 6 mos & 2 yrs. Send copy of ad and resume to: 4C SOLUTIONS, INC., Attn. Charlie Tarpley, 1201 7th St., East Moline, IL 61244. Ref: JO# GL.

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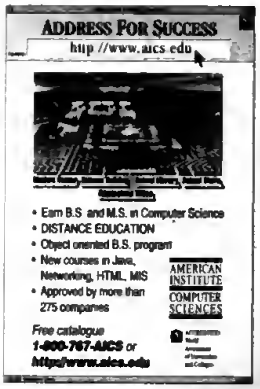
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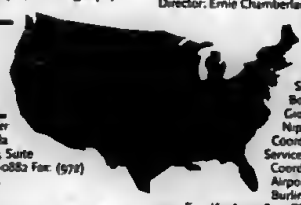

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The Week in Stocks

Gainers

PERCENT

Apollo Inc.	26.9
Matrix Corp.	23.5
ObjectShare, Inc.(L)	20.0
At Home Corp.	19.7
Netcom On-Line	8.6
Computer Horizons	7.7
Intelligent Electronics	7.5
Gateway 2000 Inc.	5.6

DOLLAR

At Home Corp.	6.44
Yahoo! Inc.(H)	3.69
Computer Horizons	2.38
Netcom On-Line	1.75
Gateway 2000 Inc.	1.63
Apollo Inc.	1.38
Kaiser Inc.	1.38
Lycos Inc.	1.25

Losers

PERCENT

Quotron Systems Inc.	-40.0
Quotron Systems Assoc.	-22.6
Micro Standardcorder Inc.	-21.2
Micro Standardcorder Inc.	-20.0
Bristol Corp.(L)	-18.5
Micrologic Inc.	-17.9
Quotron Corp.	-16.2
Solar Inc.	-13.9
Network Corp.	-10.5

DOLLAR

Quotron	-12.25
Micrologic Inc.	-11.25
Cisco Systems Inc.	-11.19
Micro Standardcorder Inc.	-10.38
Computer Solutions(H)	-9.94
Sierra Town Systems Inc.	-9.25
Oracle Corp.(L)	-9.00
Computer Software Technologies	-8.31

INDUSTRY ALMANAC

Surviving Asia

The economic turmoil in Asia that caused markets to tumble last month continues to selectively affect U.S.-based businesses. System Software Associates, Inc. (SSA), a maker of enterprise management software, is a case in point.

SSA executives last Tuesday reported that the company's fiscal year-end quarter was its best ever, but the market responded negatively. Revenue was $126.5 million, up from $109.4 million in the same period last year. Net income was $2.7 million compared with a $5.7 million loss during the same period last year.

But the market expected earnings per share of 23 cents vs. the 19 cents SSA recorded, according to First Call Corp. in Boston, an investment research firm.

Officials at Chicago-based SSA said growth in Asia, where the vendor gets 20% of its annual revenue, was disappointing. SSA's stock price fell last Tuesday by about $5.57 to close at $9.68, during one day of trading.

SSA's stock decline may have been influenced by Oracle Corp. That vendor's stock lost almost one-third of its value — falling 9-7/16 points to 22-5/16 — last Tuesday. Oracle also blamed Asia in its earnings report (see related story, page 29).

Despite the punishing market reaction, Bert Hochfeld, an analyst at Josephthal Lyon & Ross, Inc. in New York, says he intends to keep his Buy recommendation on SSA.

But SSA needs to improve its marketing to overcome problems faced during its transition to a distributed object technology for its BPCS products, he says.

Standard & Poor Equity Research in New York is maintaining its Hold rating on the company.

The Asian problem "temporarily set [SSA] back a bit, but in the long run they're still on the right path," says Brian Goodstadt, an analyst at the New York-based firm.

— Patrick Thibodeau

STEADY RISE, QUICK FALL

System Software Associates' stock price was rising until September, but it's been dropping ever since

Exch	52 Week	Range		Dec 12 Close	Wk Net Change	Wk Pct Change
COMPUTER HARDWARE						
COMS	81 38	24 00	3 COM Corp	34 06	1 44	4 7
AIT	81 25	54 75	AMERITECH Corp	78 23	1 00	1 4
ASND	80 25	22 00	Ascend Communications	27 63	2 44	8 1
T	78 56	59 75	AT & T	57 44	0 44	0 8
BNYN	8 56	1 19	Banyan Systems Inc	2 94	0 56	18 1
BAY	41 88	15 38	Bay Networks Inc	21 94	5 00	17 3
BEL	91 25	56 75	Bell Atlantic Corp (H)	89 19	0 88	1 0
BLS	57 50	46 00	Bellsouth Corp	55 50	0 00	0 1
BRKT	11 75	6 23	Brooktrout Technology	9 75	1 00	9 1
CS	48 50	15 61	Cabletron Systems (L)	11 81	1 81	11 8
CCAM	21 38	8 81	Centigram Communications	14 75	1 94	11 6
CSCO	80 38	49 23	Cisco Systems Inc	76 72	11 78	13 3
CMNI	7 00	4 31	Computer Network Tech	6 00	0 01	7 8
DIGI	32 73	18 88	DSC Communications	21 81	1 56	8 7
FORE	39 61	10 00	FORE Systems Inc	16 00	3 13	16 3
GDC	12 38	3 44	General Datacomm Indus (L)	4 44	0 31	8 3
GSX	51 00	18 13	General Signal Networks	40 69	0 00	0 0
GTE	51 25	40 50	GTE Corp	49 13	0 19	0 3
LU	80 15	44 75	Lucent Tech	75 56	4 75	3 5
MADG	16 13	6 50	Madge Networks NV	9 88	1 13	18 8
MCIC	45 00	27 31	MCI Communications Corp (H)	41 56	1 25	2 8
NETM	7 75	2 44	Netmanage Inc (L)	2 44	0 09	5 2
NTBR	7 00	0 56	Netrix Corp	1 81	0 25	23 5
NCDI	18 25	7 00	Network Comput Inc Device1	7 38	0 00	0 0
NWK	22 13	11 23	Network Equipment Tech	11 50	0 81	5 7
NN	69 13	27 25	Newbridge Networks Corp	58 00	6 94	16 2
NT	111 88	57 75	Northern Telecom Ltd	90 19	6 63	6 8
NOVL	13 00	8 28	Novell Inc	9 88	0 59	1 0
DOSI	15 25	8 23	Optical Data Systems Inc	8 25	1 63	20 8
PCTL	10 13	6 81	Picturetel Corp (L)	6 88	0 88	11 3
PTON	3 75	1 51	Proxim Inc	1 41	0 16	10 0
RACO	4 88	1 00	Racotek Inc	1 44	0 00	0 0
RETK	9 25	5 88	Retix	6 19	0 66	14 5
SBC	75 19	48 56	SBC Communications	70 81	1 88	2 6
SFA	26 94	14 23	Security First Atlantic	18 56	0 94	4 6
SNWA	41 88	8 19	Sienna Corp	8 50	1 00	9 5
FON	80 85	34 38	Sprint Corp	31 56	0 81	0 3
SMSC	18 15	8 23	Standard Microsystems Corp	9 88	1 63	13 3
USW	46 81	36 83	U S West Inc (H)	45 31	0 44	1 0
WIRC	51 19	7 38	Wiscorp	9 00	0 11	1 1
XYLN	57 25	12 38	Xylan Corp	16 56	5 16	23 9
PERSONAL COMPUTERS						
AAPL	29 38	12 13	Apple Computer Inc	19 11	1 44	9 1
CPQ	79 88	28 50	Compaq Computer Corp	57 63	3 88	11 0
DELL	101 88	23 00	Dell Computer Corp	88 00	4 88	4 9
GTW	46 25	15 19	Gateway 2000 Inc	30 50	1 63	5 6
HWP	72 94	48 13	Hewlett Packard Co	60 50	5 63	8 5
MLHI	23 38	9 73	Micron International Inc (L)	5 75	1 19	10 6
NIPNY	74 00	48 63	NEC Am Depos A	52 00	0 15	0 3
SGI	30 31	12 63	Silicon Graphics	13 81	1 56	12 5
SUNW	53 81	25 50	Sun Microsystems Inc	35 88	6 13	14 2
MINICOMPUTERS						
DGN	17 94	13 63	Data General Corp	18 88	1 31	7 3
DEC	53 81	25 00	Digital Equipment Corp	56 25	5 75	15 1
IBM	113 00	85 63	I&M (H)	89 00	23 25	11 9
MDCII	7 75	2 88	Microtan Data Inc	3 94	0 00	0 0
PRCM	20 13	9 00	Prime Computer Inc	14 38	1 44	11 1
SQNT	51 25	14 50	Sequent Computer Sys	30 41	1 00	5 1
TEXM	6 00	2 06	Squadra Systems Inc	4 75	0 38	8 3
SRA	48 75	25 38	Sperate Computer Inc	58 00	1 13	2 0
UIS	18 50	5 75	Unisys Corp	11 16	1 88	9 5
SOFTWARE						
ADBE	53 19	42 56	Adobe Systems Inc	45 19	5 31	14 2
AMSWA	15 63	5 00	American Software Inc	6 88	0 75	9 8
APLX	26 50	3 13	Apple Inc	8 56	1 38	26 3
ARSW	53 25	17 88	Arbor Software	31 88	1 38	6 2
AOSX	31 13	25 25	Autosystems Inc	33 00	0 51	15 8
BCSS	38 00	21 00	BCS Systems Inc	34 00	2 00	5 6
BMCS	71 25	39 03	BMC Software Inc (H)	56 88	13 25	18 9
BOOL	75 25	16 83	Bool Ean Baggage	18 50	0 00	0 2
BORL	12 16	3 38	Borland Int'l Inc	6 81	0 00	0 6
BOBJ	16 75	6 63	Business Objects	9 63	1 44	15 0
CAYN	8 25	2 88	Cayenne Software Inc	2 25	0 13	5 5
CNTR	3 88	1 13	Centura Software	1 38	0 01	10 5
CHKP	80 50	15 63	Checkpoint Software	9 00	9 13	19 2
COGN	35 88	17 63	Cognos Inc	20 50	2 38	10 4
CA	97 50	24 88	Computer Associates (H)	67 56	7 81	16 1
CVN	10 06	1 94	Computervision Corp	3 81	0 63	19 9
CPWR	39 50	12 00	Computware Corp (H)	30 00	6 38	27 1
CSRE	18 88	4 25	Consilium Inc	5 66	0 75	17 2
COSFF	8 25	2 06	Cosar Corp	2 11	0 03	1 6
DWTI	8 13	2 25	Datawatch Technologies Inc	3 81	0 19	4 3
FILE	36 38	9 50	Filenet Corp	28 88	1 00	6 8
FRTE	39 50	7 25	Forte Software	9 25	0 69	6 9
FTPS	9 38	1 75	FTP Software Inc	1 75	0 34	16 4
HUMC	54 25	22 00	Humanscan Comm Ltd	23 50	0 50	1 5
MYSW	13 38	13 00	Mysoft Software Corp	14 00	4 75	12 3
IBIC	20 88	11 75	Information Resources	14 56	0 00	0 6
IFMX	26 38	3 28	Informix Corp (L)	3 28	0 84	15 8
INGO	14 19	8 25	Intergraph Corp	9 38	1 11	12 3
LEAF	4 00	0 81	Interleaf Inc (H)	1 75	0 00	0 0
ISLI	18 50	6 25	Interlink Inc	15 03	1 69	11 5
INTU	38 88	20 88	Intuit Inc (H)	34 13	0 25	0 7
TLC	20 50	3 56	Learning Co (The)	17 00	0 38	4 0
LGWA	12 88	6 13	Logic Works	8 50	0 25	3 0
MAPS	14 25	7 88	Mapinfo Corp	11 00	1 75	13 3
MATH	5 13	2 19	MathSoft	3 44	0 00	0 0
MENT	13 13	8 50	Mentor Graphics	9 13	0 38	3 9
MERQ	39 13	16 00	Micro Focus	36 38	0 88	2 5
MCAI	10 63	9 00	Microcom Inc	8 25	1 00	13 4
MSFT	150 75	76 38	Microsoft Corp	136 44	6 94	4 8
OBJS	3 00	0 44	ObjectShare, Inc. (L)	0 75	0 19	20 0
ORCL	42 13	22 19	Oracle Corp (L)	22 19	9 00	28 8
PMTC	64 25	37 50	Parametric Technology	42 13	7 25	16 7
PSFT	38 56	13 31	Peoplesoft (H)	32 00	5 69	10 5
PTEC	13 75	11 88	Phoenix Technologies	14 31	0 00	0 0
PSQL	13 75	6 50	Platinum Technology	8 75	0 44	3 3
PLAT	50 81	10 25	Platinum Technology (H)	29 50	5 88	12 1
PPCI	25 25	14 63	Progress Software Corp	19 75	0 25	1 1
RNBO	28 13	15 75	Rainbow Technologies Inc	25 25	0 75	3 1
REDB	28 50	3 00	Red Brick Systems Inc	3 94	1 44	16 5
ROSS	6 75	1 75	Ross Systems, Inc	1 25	0 06	1 6
SAFE	61 00	10 88	Safeguard Corp	53 31	0 19	0 4
SCOC	8 63	3 19	SCO Inc	4 13	0 88	12 5
SDTI	44 38	21 00	Security Dynamics Tech	36 25	0 44	1 2
SOYA	18 88	2 88	Soft-ware Ant Art (H)	18 00	0 00	0 2
SSW	41 19	27 25	Sterling Software Inc (H)	39 13	1 06	2 6
SDRC	50 00	15 75	Structr Dynamics Research (L)	17 19	0 56	3 4
SYBS	23 63	12 15	Sybase Inc	12 19	1 75	12 6
SYMC	27 75	12 00	Symantec Corp (H)*	24 44	1 61	6 0
SNPS	67 13	27 75	Synopsys (H)	48 38	4 75	11 0
SSAX	17 13	3 88	System Software Assoc	10 00	4 81	52 4
SYSF	13 38	5 00	Systemsoft Corp (L)	8 63	0 00	0 0

Exch	52 Week	Range		Dec 12 Close	Wk Net Change	Wk Pct Change
TRUV	9 19	1 50	Truevision Corp	2 38	0 63	20 8
VNBR	11 75	5 75	Vienna Softwares Inc	8 13	0 38	5 0
WALK	18 25	10 50	Walker Interactive Systems	12 50	0 13	2 6
WALL	29 13	16 25	Wall Data Inc	14 13	1 56	8 6
WANG	25 00	16 00	Wang Laboratories Inc	19 00	2 38	10 6
INTERNET						
AMZN	66 00	15 73	Amazon Corp	54 13	1 71	2 9
AOL	91 15	81 00	America On-Line	85 31	1 16	5 4
ATHM	80 63	18 63	At Home Corp	26 94	4 44	16 2
CSRV	14 94	8 88	Compuserve Corp	53 88	8 56	4 3
EDFY	22 15	8 88	Edify Corp	13 88	0 88	5 3
XCIT	45 00	7 50	Excite Inc	22 25	3 31	9 4
SEER	14 50	6 38	Inktomi Corp	9 00	1 94	17 7
LCOS	42 00	10 13	Lycos Inc	32 25	1 25	4 0
NETC	22 00	7 88	Netcom On-Line	22 06	1 75	8 6
NSCP	85 00	23 00	Netscape Comm. Corp	27 31	2 38	8 0
ONET	17 88	9 00	Open Market Inc	10 63	0 75	6 6
PSIX	15 88	5 88	PSINet	5 75	0 69	10 7
QDEK	6 31	1 63	Quarterdeck Corp (L)	1 63	0 16	10 5
RAPT	25 00	8 88	Raptor Systems	15 00	0 00	0 5
SCUB	14 61	4 75	Secure Computing Corp	11 88	1 06	8 2
SPYG	18 88	9 00	Spyglass Inc.	8 50	0 75	10 5
YHOO	61 00	11 19	Yahoo! Inc (H)	58 19	2 69	4 8
SEMICONDUCTORS						
AMD	48 50	2 69	Advanced Micro Devices	16 00	0 44	16 3
ADI	56 00	20 63	Analog Devices Inc	25 50	4 19	14 1
CHPS	22 75	1 88	Chips and Technologies	15 06	0 31	2 0
CRUS	80 88	8 00	Cirrus Logic	11 01	0 00	0 0
CY	15 94	8 56	Cypress Semiconductor Corp (L)	8 56	1 44	14 4
INTC	108 00	62 88	Intel Corp	90 00	2 88	3 1
LSCC	74 88	38 75	Lattice Semiconductor	51 56	2 69	5 0
LSI	46 88	18 63	LSI Logic Corp	30 00	2 44	10 9
MCRL	38 88	15 00	Micrel Semiconductor Inc	22 88	10 38	31 2
MU	60 00	22 00	Micron Technology	22 73	2 69	18 8
MOT	80 00	53 25	Motorola Inc	55 63	0 81	10 9
NSM	42 88	21 63	National Semiconductor	24 94	4 75	50 0
TXN	71 25	50 63*	Texas Instruments	60 88	5 00	12 0
VLSI	38 88	14 88	VLSI Technology	16 88	2 94	35 6
61INK	88 00	28 00	Xilinx	32 13	4 73	12 9
ZLG	29 50	17 88	Zilog Inc	18 00	0 88	4 0
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KEY: (H) = New annual high reached in period (L) = New annual low reached in period

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Info addicts wreak havoc on workplace

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people actually "crave" information, according to a just-released survey by New York-based Reuters Ltd. Moreover, 54% of the 1,000 people polled said they experience a "high" when they find the information they have been seeking.

"There's voicé messages, E-mail, fax messages and the Internet, and there is a true addiction to it," said Kimberly Young, a professor of psychology at the University of Pittsburgh in Bradford, Pa.

The Internet in particular feeds America's fast-food mentality toward information. It's instantaneous gratification, and it entices you to use it more often," Young said.

"We have 20,000 people, and no more than 2% of them have Internet access."
– Jim Gustafson, The Stanley Works

But much of the information that users draw from the electronic well is peripheral or downright useless, said several information systems managers. It clogs data pipes, slows access for legitimate business users and eats away at corporate productivity.

Indeed, according to the survey, more than one-third of respondents believe their colleagues are obsessed with gathering information, and 65% said that makes their work environment more stressful.

"The whole wireless explosion has been murder," said Tom Murphy, chief information officer at Bristol Hotels & Resorts in Dallas. "I have people tracking baseball games live on their pagers, just because it's possible."

In the past year, online news feeds have caught the fancy of several Bristol senior executives "who are asking us to open up our firewall to drive PointCast and Bloomberg [news feeds] to their PCs," he said.

But Murphy said he doubts all the requested information is always adding business value. "Access to information is primarily emotional," he said. "People have a belief that having it immediately will make a meaningful difference in their success or their lives, but very seldom is that the case."

A help desk manager at a large insurance company in Philadelphia agreed. He said he spends much of his time fulfilling users' requests for information "that winds up being more of a C.Y.A. type thing than anything else."

"I spend far too much of my time trying to pull and gather information about things that have already happened rather than focusing on what I need to do strategically for the future," said the manager, who requested anonymity.

Another problem is users who just don't know when to quit collecting data.

"We've been going over software to come up with a common operating environment, which means we need to set milestones and a cut-off point," the manager said. "But there are people who come in each week and say, 'I just pulled this other thing off the Web.' I consider that person a dataholic."

REDUCING INFO OVERLOAD

What should companies do to help people in the gathering, management and use of information?

Invest more in training	83%
Set rules to prevent overload	73%
Treat information as a boardroom issue	57%

Base: 998 respondents

Source: Reuters, New York

HIGH ON DATA

Do you know of colleagues who get some sort of "high" when they find the information they're looking for?

Base: 998 respondents

Source: Reuters, New York

TRAINING

Limiting Internet access and monitoring workers' usage are among the measures companies can take to curb the information tide.

The Stanley Works, a tool manufacturer in New Britain, Conn., provides Internet access only to users who can prove they have a legitimate business need, said Jim Gustafson, vice president of information technology.

"We have 20,000 people, and no more than 2% have Internet access," Gustafson said.

Mark Haubrich, IS manager at Morgan, Lewis & Bockius, a Philadelphia law firm with 2,300 users, said companies and users would benefit enormously from information management classes.

In the Reuters survey, 84% of respondents also recommended classes, yet 58% said their companies didn't offer them.

Such classes would teach workers how to conduct very targeted electronic searches; how to organize and summarize the data they find; and how to use desktop software to incorporate new data into reports or other electronic documents.

"The information on the Internet especially is so easily accessible that you sort of get consumed by it," Haubrich said. □

Extranet express

CONTINUED FROM COVER 1

American Express Co.'s retirement services unit, which is charging up-front and annual support fees on a new analysis application for its 340 corporate clients (see story, page 57).

The fees are relatively modest: $2,500 for a three-user setup and $1,500 per year for support. Amex officials said the fees aren't meant to make money for the company. Amex just wants to cover some of its development, maintenance and dial-up phone line expenses, officials said.

But the decision to go ahead with the fees wasn't an easy one, said Todd Wold, marketing manager at American Express Retirement Services in Minneapolis. And he said the charges may be prompting some of the unit's customers to put off implementing the ExpressLink application. "It would be nice to just offer it built in as part of our [services]," Wold said. "But we wanted to be up front about the cost, as opposed to burying it somewhere."

Two Amex clients who used ExpressLink to track their 401(k) plans said they don't begrudge the fees. "We considered them to be pretty nominal, and you're going to pay for it one way or the other," said Lee Holliday, director of retirement and savings at Flagstar Cos., a restaurant company in Spartanburg, S.C. "I'd rather know exactly what I'm paying for."

"My sense is that this is an issue that's unresolved in nearly all cases," said Brian Murphy, an analyst at The Yankee Group in Boston.

Many business customers are likely to "be realistic and recognize that things that have value aren't usually offered for free," Murphy said. But giving outsiders online keys to the vaults of historical data that companies keep on them can also be viewed as "a goodwill gesture that's a way to lock in a customer, which is the name of the game," he added.

FREE ACCESS

With that in mind, other companies that have opened their data warehouses to outsiders aren't charging for the privilege.

For example, Charles Schwab & Co. is giving mutual fund companies free access to a Java-based data analysis application that lets them track their sales through the San Francisco-based brokerage.

Schwab hopes the ability to customize reports and download them via the World Wide Web will help the company keep the mutual fund purveyors out of the clutches of rival brokerages, said Linda Coffey, a vice president in its fund relations department.

Likewise, Dallas-based computer distributor CompuCom Systems, Inc. doesn't charge customers who tap in to its data warehouse for a little analysis.

Setting up the data views and security provisions needed for external access took about 12 person-weeks of work, said Darrell Piatt, information services director for advanced technologies at CompuCom.

"But now it's up and running, and we don't have to touch it much," Piatt said. "And the way we look at it is that if we didn't let customers do it over the Web, they'd just be coming to us and asking us to do reports for them. Self-service costs us less." □

OPENING THE VAULT

The benefits of unlocking your data warehouse to external users can include:

- Tighter business relationships with customers
- Competitive advantages over rival companies
- Less need to have IS staffers build and run queries for customers
- Reduced demand for producing and distributing monthly paper-based reports

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COMMENTARY

Cheers (and fears) for governance

Allan E. Alter

I'm getting nervous about IT governance. I'm convinced that IT governance — working out and implementing a lasting agreement between IS and line management that divides information technology responsibilities between the two parties — is necessary to manage IT today.

Others agree. Gartner Group and Forrester Research consultants yak up IT governance. A quick Web search turned up evidence that Coopers & Lybrand, Nolan Norton Institute and other consultancies are advising corporations on IT governance, and that the Kaiser Permanente health chain, the states of Pennsylvania and Wisconsin and several universities are implementing IT governance.

Which is why I'm feeling nervous. When a great idea starts to spread in the IS world, the trouble has just begun. Hurrah, hurrah, watch out, I say.

Hurrah once, because governance forces line managers to take long-term responsibility. Line managers need to get involved in IT decisions (see "The word from the top," page 74), but they need to get involved in the right way. We don't want the *deus ex machina* types who appear, claim to straighten out the messes made by mere IS mortals, then disappear. Nor do we need the occasional champions who back IS projects only when convenient. IS needs line managers who stick with it day in and day out.

Hurrah twice, because governance helps make centralization politically correct. Everyone knows we've got to cut IT spending, align IS and business, manage vendors better and share data. All of that requires a more centralized IS function. If we're going to centralize without repeating the mistakes of the past, we need line management support, understanding and involvement. That requires IT governance.

So why am I suspicious of something that's so necessary?

Governance smacks of that engineering mind-set that gets IS people in trouble. Create a rational procedure, the theory goes, and rational people will make rational decisions. Baloney. That won't fly in the decidedly nonrational real world, where decision-making processes fall apart like boiled chicken off the bone. Personal relationships, trust in individuals, power and lobbying skill always trump procedures at decision-making time.

If governance makes IT business decisions sluggish and unresponsive, then what good does it do? Governance is incomplete unless it makes room for leadership, and it won't work if it ossifies into a formula. It stays alive only if leaders infuse it with values and ideas that make their company a winner: responsiveness to the market, speed, innovation, customer service, product excellence.

Don't bother with governance if the CEO can't do three things: hammer out a clear business goal and strategy, work through an IT strategy even a simpleton can understand and talk them up until the whole company is buzzing.

If that's been done, you can go to work. Do it fast: Give yourself weeks, not months. And keep it simple. Make sure it won't trip up IT leaders: Does your governance scheme further or hinder the company's goals and values? Can you make yes/no decisions quickly? Can you respond to sudden change pronto? Does it help keep excitement about IT alive?

Achieving great things with IT requires the sort of values, ideals and emotion that create passion; not a mission statement, but a feeling of mission. Only leaders, not governance committees, can do that. IT without governance is ineffective. But governance without leadership is dull, gray and doomed. □

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Who will the bankers bank on?

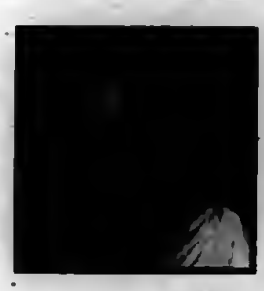
David Moschella

Even if you're not in the banking industry, you would be wise to keep an eye on the current battle to control the nation's Internet payment mechanisms. The cooperation and competition going on in the financial services world will soon be coming to an industry near you.

In recent weeks, Hewlett-Packard and its newly acquired VeriFone, along with EDS, introduced their Internet-based retail credit-card processing service. Microsoft announced the first bank customers of its new home bill-paying service, being co-developed with transaction processing giant First Data. And more than a year ago, IBM and 15 of the nation's largest banks announced Integrion, positioned as a complete electronic-commerce infrastructure.

What's going on? One thing's for sure: This isn't about computer companies becoming banks. Even Microsoft won't be handing out loans any time soon. It is about what sorts of electronic services banks will provide, and how. For banks, the stakes are sky high. In theory, there is almost nothing that a bank does that couldn't be run over a network and managed by software.

More specifically, banks have always controlled the nation's payment systems. They dole out cash, clear checks, transfer funds and run both automated teller machine and credit-card systems. Despite the illusion of fierce competition, MasterCard and Visa are both basically owned and operated by the same group of large banks. Not surprisingly, those same banks see Internet-based payment systems as just the next stage of the game. The Integrion business model was derived directly from that logic.



In contrast, while the HP/EDS efforts are clearly a response to IBM's move, those companies' approach is much more specialized. They are essentially offering a turnkey retail service. That is a typical HP approach, in sharp contrast to IBM's penchant for grander infrastructures and architectures. Like IBM, HP and EDS are trying to shape broad financial transaction standards, but through a separate, more open forum.

Then there's Microsoft, which once again emerges as both friend and foe. It rightly believes that home bill paying could become a compelling online service. For a small piece of the action, Microsoft and First Data are willing to provide that capability to banks. But they might also offer it to the bill senders, bypassing the need for any direct involvement by the banks.

All of this puts banks in an interesting strategic dilemma. In an area they believe to be of the highest strategic priority, do they stick to their traditions and go with the Integrion-type approach?

Wisely, IBM has made it clear that it has no intention of competing with its customers. But then again, much of the Integrion software is under IBM's control. Bankers know as well as anyone about IBM's checkered software history.

On the other hand, though Microsoft pays lip service to the idea of not competing with banks, its track record is also clear. Whether in travel, entertainment, classified ads, news, stocks or other services, Microsoft is perfectly willing to compete with any customer, if the opportunity appears sufficient. Then again, as banks become increasingly wedded to Windows NT, it's easy for them to see bill paying as just another application.

Many banks are hedging their bets and showing interest in working with all three companies. That will be fine until major deployments begin. As technology becomes ever more deeply embedded in virtually every business, other industries will soon face similar choices. □

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The Back Page

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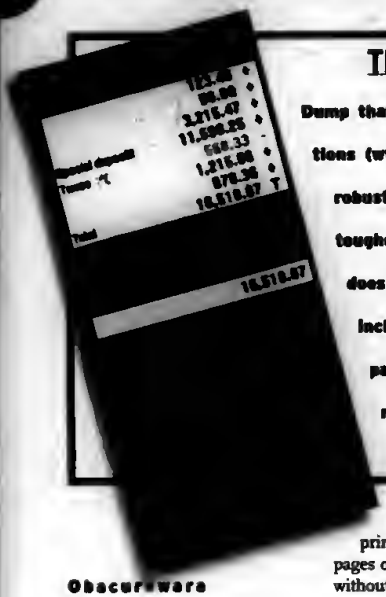
Dispatches & images from the fringes of the electronic frontier



THE QUIET ADDING MACHINE

Dump that wimpy calculator in Windows. Judy's Applications (www.judysapps.com) in San Jose, Calif., offers a robust, $19.95 software calculator that handles the toughest problems, including scientific equations. It does double duty as an adding machine and even includes a virtual "tape" that can be copied and pasted into other PC applications. Ernst & Young recently purchased a site license for its thousands of U.S. auditors.

Obscureware

Wpoison.is free software (*www.e-scrub.com/wpoison*) that fouls up routines that spammers use to collect E-mail addresses.

Fine Print, a $19.95 utility from Single Track Software in Palo Alto, Calif., (*www.singletrack.com*) could save a lot of paper, ink and toner. It prints multiple document pages on one sheet of paper without losing much legibility.

Here's something truly useful for your corporate intranet: a software version of those reception-area boards showing whether employees are in or out of the office. The applet — priced at $40 per server plus $5 per user — is available from Winter Park Construction at *www.wpc.com/inout*.

Low-tech searches

Frustrated by thousands of hits from Internet search engines? Human research librarians at SearchMill.com (www.searchmill.com) in Boston will do a basic Internet search and filter out the garbage for $4.99.

Electronic sniffers guarantee freshness

Companies are turning to "artificial noses" to ensure the freshness of foods and drinks, the San Francisco Chronicle reports. For example, the computerized aroma scanners are used to test Coors beer, Evian water and Starbucks coffee. Meanwhile, Troy Nagle, a researcher at North Carolina State University in Raleigh, has developed a sniffer to monitor the effectiveness of odor-control efforts at hog farms.

Inside Lines

Does that violate child labor laws?

"We know there was a [redacted] developers, but we had no idea how new. Mark [redacted] of platform development at Sony Online [redacted] of classifying around one of his lead [redacted] Java programmers aren't old enough [redacted] not joking," he says.

Eat your heart out, Jared Spool

Maybe the U.S. [redacted] a thing or two from an academic [redacted] (maybe not now). Mike Foster, [redacted] an out-of-court [redacted] grade he [redacted] Duke of Goode Act. [redacted] Windows 95, he [redacted] it. It isn't a total [redacted] multi — 500 pounds [redacted] to upgrade his machine to a mere [redacted] 95 or Windows 98.

What's in a name? Sigh!

Since the Unbelievable Outlook Users Group is "tremendously difficult to say three times quickly," the New York-based association for disaster recovery professionals is changing its name to the 7x24 Exchange, said Executive Director Joseph Fabulous.

Oracle plays name game

Oracle can't seem to make up its mind about what to call its new Web-based application. In the past two weeks, the much-touted application package was given the monikers Oracle Applications 10.7W and Oracle Applications 10.7 Web. Oracle settled on Oracle Applications 10.7 NCA (Network Computing Architecture). Guess the marketing department at Oracle's Network Computing Architecture unit was the same guess.

Microsoft defense: The smoking gambit

Soon after the Department of Justice [redacted] Microsoft proposed a defense [redacted] were groups gathered [redacted] help filer and [redacted] browser's frame technology [redacted] Internet Explorer, so users will [redacted] and display these HTML files.

Look who's sitting at the mall

American Express CEO Kenneth Chenault [redacted] quite the proponent of electronic commerce, [redacted] for spending money and [redacted] go to Borders or Barnes & Noble and [redacted] he told an Internet World session in New York [redacted] listing — a computer must of the day, I'd rather be [redacted] around." Apparently he hasn't been looking for a mall [redacted] space this week.

Two E-mail specs are better than one?

Both secure E-mail specifications — S/MIME and Open PGP — are on track to be completed in the next few months, according to sources that attended the recent Internet Engineering Task Force conference in Washington. The specs allow Internet mail to be encrypted and "sealed" with digital signatures.

Alan Baratz, president of JavaSoft, told his keynote audience at Internet World '97 that he had taken a cue from Jeanne Dixon and come up with some New Year's predictions:

- *Aliens abduct Larry Ellison.*
- *Apple announces new management team — the Spice Girls.*
- *Microsoft announces complete year 2000 solution — slated for release in 2004.*
- *Aliens return Larry Ellison.*

If you have predictions of your own, or some news tips, direct your thought patterns to news editor Patricia Keefe at (508) 820-8183 or patricia_keefe@cw.com.

WHAT IF

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